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THE DAIRY.

THE Hon. T. C. PETERS is writing a series of interesting articles on the Dairy, for the *Rural New Yorker*. Mr. P. is the State Agricultural Commissioner, and in the discharge of his official duties has visited all parts of the State. His opportunities for acquiring information on this subject, therefore, are ample; and as he is himself a practical farmer and a thoughtful and intelligent writer, his articles deserve more than ordinary attention.

He divides dairying into three branches; butter, cheese and milk, and asserts that it forms, "in one division or the other, the leading business of the farmers upon upwards of twenty of the twenty-six millions of acres in the State." The census of 1855 shows the whole number of cows to have been 1,068,427. The products of the year previous were: butter, 91,293,073 lbs.; cheese, 88,944,249 lbs.; milk sold, 20,965,861 gallons. To this must be added the milk consumed by the family. He estimates the total quantity of milk obtained at 550 gallons per cow, which, at 1½ cents per quart, would make the annual product from the cows of the State $35,258,091; while the total annual value of the three leading grain crops, Indian corn, winter and spring wheat, is only $20,502,570.

The dairyman's success depends upon his cow. When compared with other branches of farming, the cow pays a wonderful profit upon the capital she represents. "But," says Mr. P., "one thing is manifest in all the dairies which have been examined in this State—there is not a single one where the farmer makes the most judicious use of his cows. No one seems to be aware of the burden which he places upon her, nor how much he loses by not aiding her to the best of his abilities in bearing it. The Israelites, when in bondage and compelled to find their own straw and deliver their regular tale of bricks, had not a harder task than is everywhere allotted to the patient, toiling cow."

This is very well put, and the illustration is to the point. It is folly to expect a cow to give rich milk if we withhold the materials from which alone she can extract the substances of which milk is composed.

"What is milk?" Mr. P. says the answer would depend upon the locality. In New York, among the masses, "it would be defined as a bluish, whitish liquid, that has a tendency, when left at rest, to deposit a good deal more substance at the bottom than on the top. If the milk-man were to define it, he would call it still-slops, diluted and strained through the cow, and slightly improved by the addition of a little starch and water.

"But if seen and tasted when drawn from the cow's udder up among the mountains of Delaware county, where the cow feeds upon the richest herbage, and drinks from the purest streams, it would be defined as an opaque fluid, of a white color, sweet and agreeable to the taste, composed of a fatty substance representing butter, a caseous substance, for cheese, and a watery residuum."

These constituents vary in different animals. The following table, from the analyses of HENRY and CHEVALLIER, exhibits the milk of several animals in its ordinary state:

	Woman.	Cow.	Ass.	Goat.	Ewe.
Casein (cheese),	1.52	4.48	1.82	4.08	4.50
Butter,	3.55	3.13	0.11	3 62	4.50
Milk sugar,	6.50	4.77	6.08	5.28	5.00
Saline matter,	0.45	0.69	0.34	0.53	0.62
Water,	87.98	87.02	91.65	86.80	85.38
	100.00	100.00	100.00	100 00	100.00

The following paragraph deserves especial attention:

"As the secretion of milk in the mammalia is designed by Nature for the reproduction and sustenance of the race, all the food consumed beyond that required for the sustenance of life by the parent is absorbed in the the milk, and that becomes rich or poor, scant or abundant, just in proportion as the food is abundant and nutritious, or scant and of a poor quality. If, then, it be the object to make the cow the most useful, by the richness and abundance of her milk, she must be supplied with that kind of food which will furnish for use the elements found most abundant in her milk. She

must have a certain amount of food to enable her to maintain her body in its normal state. It is claimed that three per cent. of her live weight daily will accomplish this. But to supply the drain upon her system, in the milk she is expected to furnish, she must have additional food, and it is in the power of the farmer to so adapt that food to her wants that she shall not only maintain herself in good condition of body, but maintain a large flow of milk, rich in the elements of butter and cheese."

That is it. The cow requires "a certain amount of food to enable her to maintain her body in its normal state," and it is from the food given *in excess* that we obtain the milk. To give the cow only sufficient food to maintain her alive is as foolish as it would be to attempt to draw grain to market with a horse only strong enough to move the wagon. Put on another horse, and *his* power will be *clear gain*. So in feeding milch cows, or in fattening animals. It is the excess of food beyond that required to sustain the vital functions which goes to form milk or fat.

Mr. P. mentions a cow, belonging to Mr. SACKRIDER, in Delaware county, that produced in seven months,

271 lbs. of butter, sold at 20c. per lb.,	$54 20
Calf fattened and sold for	5 00
Milk sold	12 50
Milk used in family of six grown persons,	10 80
Total for seven months,	$82 50
The other five months would probably be worth at least,	8 50
Making, for the year,	$91 00

The secret of this large yield was that Mr. S. fed the cow her own butter-milk and the slops of the house.

Mr. P. says: "If the farmer who devotes his dairy to butter were to feed his cows daily with a small quantity of any of the unctuous oils, as cotton seed oil, or rape oil, mixed with bran, or meal of any kind, he would find his butter product largely increased, so much so as to furnish a great profit on the extra food consumed."

We can not agree with Mr. PETERS on this point—at least we think it would be very poor economy to give cows oil. We are aware that linseed oil has been given to cows, mixed with bran, etc., but we think general experience indicates that substances rich in nitrogen, rather than in oil, are needed to produce the largest quantity of milk—and butter. Oil-cake—that is, linseed *with the oil pressed out of it*—is a valuable auxilliary food; beans, which are remarkably rich in nitrogen, or in the so-called flesh-forming constituents, give a large increase of milk and butter. And even in the case of Mr. SACKRIDER's cow, mentioned by Mr. PETERS, the additional food she received was milk from which the butter or oil had been extracted. True, there was undoubtedly some butter left in it, and so there is oil in the oil-cake, and a little in beans, but yet the characteristic ingredient in all these three foods is nitrogen.

Mr. PETERS quotes the celebrated experiments of Mr. HORSFORD, of England, but, while Mr. H. sometimes adds a little linseed oil to the food of his cows when fattening them, he says:

"When we take into consideration the disposition of the cow, to apply her food rather to her milk than to her maintenance and improvement, it seems fair to infer that the milk of a cow gaining flesh will not be deficient in either casein or butter. I have already alluded to the efficiency of meal in increasing the quantity of butter. I learn also, from observant dairymen who milk their own cows, and carry their butter to market, that their baskets are never so well filled as when their cows have fed on green clover, which, as dry material, is nearly as rich in albumen as beans. From this we may infer that *albuminous matter* is the most essential element in the food of the milch cow, and that any deficiency in the supply of this, will be attended with loss of condition, and a consequent diminution in the quality of her milk."

The fact is, that we can rarely increase the quantity of butter without at the same time increasing the quantity of milk; and for the production of milk we need a good supply of nitrogenous, or, as Mr. H. terms it, "albuminous" matter and phosphates, and the foods which furnish these substances in the cheapest form contain also a sufficient quantity of carbonaceous or oily matter. To add oil *alone* to the food, then, is not advisable.

Mr. HORSFORD recommends steaming food for milch cows in winter and spring, and feeding it warm, and this recommendation is endorsed by Mr. PETERS. Another essential point is to keep the cows in warm, well-ventilated stables, say at a temperature of 60°. Mr. PETERS well remarks:

"If the cow be well kept in winter, she accumulates in her increased condition, a surplus of material which, when she comes into milk, will help to keep up the increased flow far beyond what one that has been kept lean can do. The difference in the yield of milk from a cow that has had generous keeping through the winter, and one that but barely comes out in the spring lean, with scarcely strength to get up alone, can only be appreciated by those who have tried the experiment. Summer feeding may not pay, yet I have found it customary among those farmers who were making the most profit from their cows, to prepare for feeding their cows with green food as soon as their pastures began to fail, and the favorite food for this purpose seems to be Indian corn, sown broadcast. It has been shown that whatever will assist the cow in obtaining the requisite amount of food at the proper time, will abundantly recompense the owner, and he is a serious loser if he neglect to make that provision.

"Where corn can not be grown with profit, roots and cabbages can, and a supply of green food can be kept up with little expense until the dairy season is over. And roots can be cultivated to advantage in every locality where good grass grows, and where corn is not a safe or reliable crop. But to make the winter feeding of roots profitable, warmth is indispensable.

"Said a successful dairyman, whose herd consisted of some eighty cows, 'I am never satisfied, unless, when I pull off my boots at night, and put on my slippers, and sit down by the fire, I feel that my cows are as comfortable as I am.' And this, I apprehend, is the key to the profitable wintering of our cows and other stock."

CHEESE MAKING.

Mr. PETERS thinks the cheese zone is much more extended than that of butter, for good cheese may be made where, from the peculiarities of soil and climate, good butter could not be produced. In this State, it is usually made on the confines of the grain and dairy (butter) regions, or where spring grains can be successfully grown. Herkimer is the great cheese county in this State. Its farmers early adopted the processes of manufacture and obtained a reputation in the market which is not diminished to this day; and "Herkimer County Cheese" is a brand that sells millions of pounds which never saw that county, unless passing through on the cars or canal boat. Mr. P. relates the following incident:

"One morning I stopped at a good sized dairy in Chenango county, and observed the women busy with the cheese making, and saw in a sink quite a large pile of nice looking butter. 'Ah!' I said to the mistress, pointing to the butter, 'you mean to make a profit from both sides of your milk.'

"'Oh, yes,' said she, '*we are making Herkimer county cheese*, and skim the night's milk in the morning.'"

The "Hamburgh cheese," made in the western part of this State, especially in Erie county, is similar to the Herkimer, and is a favorite brand in the West and South, where millions of pounds are sold that never saw the State of New York.

"To make a cheese is not a very intricate piece of business, but to make a good cheese is quite another thing. The first requisite for a satisfactory result is a good cheese room. It should be well ventilated and so arranged as to command a uniform temperature of about 75 degrees. It should have a northern exposure, with long, narrow windows. The shelves should be in the centre, and not around the room, as is usually the case. Such an arrangement facilitates the curing and handling. The implements are, a good thermometer, a patent cheese-vat, with the heater attached, curd-cutter, presses and hoops.

"In the immediate process of manufacture, the rennet is the most important agent. Many modes are adopted for saving the rennets; any that will keep them sweet is good; but the best I have used were emptied as soon as taken from the calf, filled with salt, blown up like a bladder, and hung up in a good place where they would dry rapidly and thoroughly. They should be kept till a year old before using.

"In preparing rennet for use, Mr. A. L. FISH, of Herkimer county, who has done, perhaps, more than any other man in the State, to reduce cheese-making to a system, gives the following directions in the *Transactions of the N. Y. Ag. Society for* 1859: 'Calves rennets only are used after being kept dry one year. Soak in half a gallon of soft water to each, rubbed often in the course of twelve hours, then changed to the same quantity of new water and treated as before, then taken out, both liquors put together, and made as salt as can be, strained, skimmed and put into a jar for use. By stirring before using each time, a uniform strength may be relied upon daily, of sweet, sharp rennet; and if heat is properly applied, there will be no trouble of cloth sticking to cheese when all are kept sweet.'

"Another directs to 'take four rennets, soak in one gallon warm water or sweet whey, for twenty-four hours, then rub them thoroughly, and strain the liquid into a stone jar that will hold at least two gallons, then add two quarts of water or sweet whey and a handful of salt, and again soak, rub and strain off the liquid as before, into the same jar. Do the same the third day, which will give two gallons of rennet, a teacupful of which will coagulate 70 gallons of milk in from 45 to 60 minutes. The liquid should be kept well salted, and a good supply of undissolved salt should be kept at all times in the bottom of the jar, and be stirred daily before dipping off.'

"Some recommend to put one lemon to two rennets tied up in a bag with sage, cloves and cinnamon. It may do no harm, but the great secret in regard to rennet is undoubtedly in having it always sweet, and indeed *sweet* is the word for everything connected with successful cheese-making.

"Before applying the rennet, the milk should be brought to a temperature of from 84° to 90° Farnheit,—85° is the most usual, though in cold weather it will be best to raise it to 90°. Mr. FISH recommends 90°. He also used 'one gallon of sour whey with the rennet liquor to curdle milk for 100 lbs. cheese in 40 minutes. It is found by adding sour whey with rennet, to set curd, that it facilitates the effect of the rennet, and prevents cheese from puffing without reducing the weight of cheese from a given amount of milk, as when allowed to become acidulated from other causes.'

"We follow Mr. FISH, who lets his milk stand an hour after putting in the rennet: 'The curd is then subdivided by passing a gang of knives through it in various directions, to cut it into lumps one-quarter of an inch square. If properly done, no more breaking is needed. A gentle motion by stirring the mass is required to prevent a reunion of particles. Heat is raised slowly, usually about one hour bringing it to 100°, which is the maximum. It is held at that point till curd appears sufficiently cooked, which varies from one to two hours. When curd is so cooked as to spring apart elastic, when pressed in the hand, or squeaks well when pressed against the front teeth, it is sufficiently cooked. The whey is then drained off and pressed out by

the hands, as much as possible, and one lb. of Liverpool ground salt added to forty lbs. of curd, well worked in, and put to press warm, as the whey will press out better than when left to get cold, pressed with two tons weight six hours, then turned into clean cloth and pressed twelve hours, and taken from the hoop. When dry, a coat of hot oil of whey butter rubbed over to keep the rind smooth and from cracking, and turned and rubbed daily. Temperature of cheese-room kept as near 70° as possible. A little coloring is used at a season when needed, by rubbing a cloth or small bag, containing a lump of annatto, in the liquor containing the rennet, so that it is incorporated with the milk. When milk is rich enough to make curd a cream-color, and cheese a butter color, no annatto is used.'

"In no one thing is there so great a diversity of opinion and practice as the heat required to cook the curd. In consulting the statements of over one hundred among our best dairymen, I find the range from 100°, as stated by Mr. FISH, to 140°, as practiced in another good dairy. These are the extremes. A large majority range from 105° to 115° —110° being the favorite point.

"After the cooking, the curd is salted before being put into the hoop to press. Here, again, is a diversity of opinion, and a great deal of guess-work. Some use so many teacupfuls to a certain quantity of curd, all guessed at, others more, and others less, and some have an exact rule. If the curd be in such a state of dryness that not more than three or four quarts of whey will drain from the curd of a cheese weighing 60 lbs. when fully pressed, then at the rate of two and a half lbs. to the hundred will be sufficient, if well incorported. I am using the 'Factory Filled,' made at Syracuse, and find it by far the best salt for dairy purposes of any that has yet been brought into market. A good rule, from the *Country Gentleman*, to find the quantity of salt for a given quantity of milk, is to multiply the gallons of milk by eight, and that product by three, and point off three figures from the right hand. The answer will be pounds and decimals of a pound. Multiply the decimals by sixteen and it will give the ounces. Thus: given, 50 gallons of milk:—$50 \times 8 = 400 \times 3 = 1.200$, or one lb. and two-tenths; multiply the $.200 \times 16 = 3.200$, or three ounces and a fraction. So the quantity of salt for the curd of fifty gallons of milk would be nineteen ounces, or one lb. three ounces.

"Great care must be used to keep the milk sweet, as well as all the utensils used in the dairy. Without this precaution, good cheese can not be relied upon, indeed it can not be made.

"The quantity of milk to make one lb. of well pressed cheese, fresh from the press, varies with the season, but the average for the year will be four quarts and two gills. The shrinkage is ten per cent. for the first thirty days, and about twenty per cent. for a year.

"To make good cheese requires good, rich milk, good rennet, good implements, and plenty of care, judiciously bestowed. Without all these, a person had better not engage in the business."

BLISTERED FEET.—Before putting on your stockings, turn them inside out and rub a little brown soap well into the threads.

A FEW WORDS ON HAY AND HAY-MAKING

FOR fattening sheep in winter, there is nothing equal to good CLOVER HAY. For horses, too, when properly cured and free from dust, it is excellent. We have never fed it to cows, but we see no reason why it should not be good for them also.

Till within a few years, clover hay has been underrated by the majority of our farmers; but its value is now very generally acknowledged, and each year witnesses a greater quantity cut, and more care and skill bestowed in curing and stacking it.

Almost every farmer has his own peculiar method of making hay, and we would not advise any one to suddenly change his method, unless it is glaringly defective. The chief object to be attained is to cure the hay *with as little exposure to the sun, to dry winds, to dews, and to rain as possible.*

As compared with Western Europe, and especially with the British Isles, our climate is very dry and searching. The western winds strike the coasts of Ireland and of Great Britain laden with the moisture of the Atlantic Ocean, while the same western winds, which so generally prevail here, have been deprived of their moisture in their passage over a vast extent of country. An Englishman on coming to this country is surprised to find the roads muddy to-day and dusty to-morrow, and his good wife, who has all her life experienced considerable trouble in "drying the clothes," is astonished to find them so suddenly deprived of moisture.

This remarkable dryness of the atmosphere must be borne in mind in hay-making. A heavy dew, followed by a hot sun and a dry, searching wind, will soon convert a field of mown and spread-out clover into a mass of dry, hard stalks, of little more value than wheat straw.

If clover is mown with a scythe, we should not spread it out, as many of the leaves are shaken off and lost—and the leaves are the best portion of the clover. Let it remain in the swath till the leaves on the top are partially dried—care being taken to avoid letting them become brown, dry and brittle, as in this case, besides the loss, the hay will become very dusty and liable to prove injurious to horses—then turn, and as soon as the upturned surface is dry enough, make into medium sized cocks. There are many farmer's men who do not know how to make a cock of hay. *Each forkfull should be turned upside down as it is placed in the cock.* This will keep the middle of the cock highest, and when nicely rounded off it will shed

water like a duck's back, and if wet weather should occur the crop will be comparatively safe. Even if there was no danger of rain, the greater ease with which such cocks can be pitched on the wagon fully compensates for the slight extra labor required to make them properly.

The mowing machine affords greatly increased facilities for curing clover properly. A good plan is to cut the clover as soon as the dew is off; turn it carefully with forks, about noon, and gather it into small cocks before the dews come on in the evening. Let it stand in these cocks till it is cured. Before drawing in, turn the cocks so as to expose the bottom to the sun.

In stacking, it is desirable to make the stack as large as can be done conveniently. A little salt scattered on the layers in stacking—say from one to two quarts to a load—will retard any tendency to excessive fermentation, and also improve the quality of the hay. If the hay is rather green, a thin layer of clean straw between the layers of clover will absorb the juices and prevent excessive heating, and the straw will become as palatable as the hay itself.

In regard to the mooted question, when to cut, we think a "happy medium" is best. There can be no doubt that more fodder is obtained by allowing the clover to get quite ripe, but the increased quantity is obtained at the expense of the quality of the hay. It may be allowed to stand without loss till the lower leaves are fully matured, or till the heads begin to turn brown. If the crop is very heavy, it should be cut early, as the stalks are then full of juice and they will prove more palatable and nutritious. If, too, the after crop is intended for seed, cut early, as the little deficiency in hay will be more than counterbalanced by the increased yield of the subsequent crop of hay.

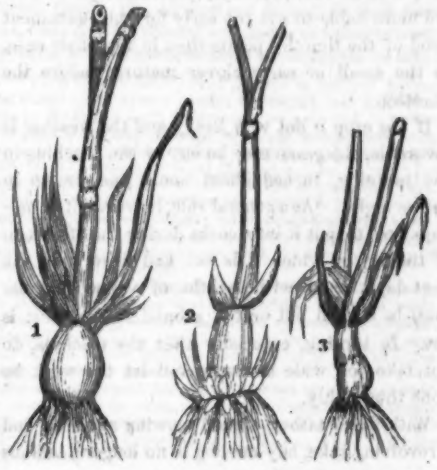
In regard to timothy and red-top, the general opinion of experienced farmers is in favor of cutting when the heads are in full blossom. A heavier crop is obtained by letting them stand longer, but it is believed to be at the expense of nutritive qualities.

Early and close cutting of timothy is thought by Dr. KIRTLAND, of Ohio, to weaken the plants. In the *Farmer* for June, 1859, page 176, we have given his views on this subject in full, and can only briefly allude to them again at this time.

1. Timothy grass is a perennial plant, which renews itself by an annual formation of "bulbs," or, perhaps more correctly speaking, tubers, in which all the vitality of the plant is concentrated during winter, (fig. 1.) From these proceed the stalks which support the leaves and head, and from the same source spread out the numerous fibres forming the true roots.

2. To insure a perfect development of these tubers, a certain amount of nutrition must be assimilated in the leaves, and returned to the base of the plant through the stalk.

3. As soon as this process of nutrition is completed, it becomes manifest by the appearance of a state of desiccation or dryness, always commencing



above either the first or second joint of the stem, near the crown of the tuber. From this point, the desiccation gradually progresses upward, and the last portion of the stalk that yields up its freshness is that adjoining the head. Coincident with the beginning of this process is the full development of the seed, and with its progress they mature. Its earliest appearance is evidence that both the tubers and seeds have received the requisite supplies of nutrition, and that neither the stalks nor the leaves are longer necessary to aid them in completing their maturity.

4. If the stalk be cut from the tuber before this evidence of maturity has appeared, the necessary supplies of nutrition will be arrested; their proper growth will cease, and an effort will be made to repair the injury, by sending out small lateral tubers, from which weak and unhealthy stalks will proceed, at the expense of the original tubers, (fig. 2.) All will ultimately perish, either by the drouth of autumn or the cold of winter.

5. The tubers, together with one or two of the lower joints of the stalk, remain fresh and green during the winter, if left to take their natural course; but if, by any means, this green portion be severed at any time of the year, the result will be the death of the plant, (fig. 3.)

From these five propositions, the following conclusions are drawn:

That the proper period for mowing timothy is at any time *after the process of desiccation has commenced on the stalk*, as noticed in proposition 3. It is not very essential whether it is performed a week earlier or later, provided that evidence of maturity has become manifest.

All attempts at close shaving the sward should be avoided while using the scythe, and, in gauging mowing machines, care should be taken to set them to run so high that they will not cut the timothy below the second joint above the tuber.

If correct, as we think they are, these observations are very important, and it follows that extreme early and close cutting should be avoided. When clover and timothy are grown together, we are more liable to cut too early for the permanent good of the timothy plants than in any other case, as the small or early clover matures before the timothy.

If the crop is not very heavy and the weather is favorable, the grass may be cut by the machine in the morning, turned about noon, and drawn in before night. As a general rule, however, it is perhaps best to put it into cocks during the afternoon of the day on which it is cut, and draw it in the next day. If cut with a scythe, of course the grass must be shaken out on the ground as soon as it is cut. In turning, especially after the machine, do not take too wide a swath, and let the work be done thoroughly.

With fine weather, a good mowing machine, and a revolving rake, hay-making is no longer a tedious or expensive operation.

HARVESTING THE GRAIN CROPS.

To let wheat get quite ripe is undoubtedly detrimental to the quality of the grain, and an injury to the straw. To cut it "two or three weeks before maturity," as has been recommended by some ultra writers, entails even a still greater loss. We know from actual experiments of our own,—what indeed common sense would teach—that in this case the berry would shrink very considerably. As a general thing, however, farmers are perhaps more inclined to cut too late than too early. A good practical test, is to take a kernel between the thumb and finger and press it out. If any milk is seen, it is not ready to cut. As soon as the kernels contain no milk, is the time to cut. The circulation of the juices in the berry has then ceased, and it can obtain nothing more from the soil.

The same test will apply to barley. The general rule is to cut as soon as the reddish color of the ear has disappeared. Maltsters rather prefer barley that was not cut till fully ripe.

Oats, if a good, heavy sample is desired, should be allowed to get rather ripe,—even till a few of the oats shell out in harvesting. But if intended to be used on the farm, especially if they are to be cut up and fed straw and all to horses, they should be cut rather green. In this case, what the oats lose will be found in the straw.

Some good farmers bind up all their wheat, barley and oats. For the two latter crops, this seems to us an unnecessary labor, but there are those who claim that it is on the whole the least expensive. Binding is, to us, an unpleasant and laborious operation. If the machine which has been invented for binding grain proves to be as valuable as the trials made with it last year indicated, barley and oats, as well as wheat, will undoubtedly hereafter be bound up.

Binding is too often performed in a careless and hurried manner. Some men leave more wheat on the ground than would pay their wages, and the sheaves come untied, to the great hindrance of subsequent operations. The sheaves should not be made too large, especially if the straw is green.

An occasional wet harvest should teach us to be be more careful in shocking. Wheat properly and compactly shocked will stand many days of heavy rain without serious injury. In wet harvests, the English farmers hood or cap their wheat shocks by putting one or two sheaves with the ears downward on the top of the shocks. This will shed the water and keep the ears of grain on the shock quite dry.

Cross-bred Sheep for Mutton.—At a recent meeting of the Central Farmers' Club in London, Mr. Hudson, of Castle Acre, one of the best farmers in England, remarked that a cross between Hampshire Down ewes, and Cotswold rams were the most profitable kind of sheep for feeding. They were "the very sheep to make food for the million. Indeed, he believed they were the most profitable sheep we could have. At twelve or thirteen months old, they would give as much as 20 lbs. or 25 lbs. of mutton per quarter, and 7½ lbs. or 8 lbs. of wool of a description which manufacturers most wanted to be grown, and which was the most useful to them."

Parsneps for Spring Use.—I can confidently recommend the use of parsneps, especially for milch cows. They are best left in the ground all winter, and dug or plowed up as required. I am persuaded that they grow under the snow, especially when the snow falls when the ground is not frozen. Last fall mine were small and considered worthless, and when taken up this spring we were astonished to find an excellent crop of fine roots, and from comparison with my carrot crop, must have been at the rate of nine or ten hundred bushels per acre.—R. W. S., *Woodstock, C. W.*

SPIRIT OF THE AGRICULTURAL PRESS.

TIMBER SHOULD BE CUT IN SUMMER.—A correspondent of the *Ohio Cultivator* says: "Recently I had the pleasure of visiting Elder BRADLEY, of Portage county, who showed me a field which he cut and cleared off in June and July, 1822. Many of the stumps are yet standing and quite sound; the rails made at the same time quite sound and good. Another field cut and fenced in the winter of 1837–8, no stumps standing, rails nearly all rotten or gone. Barn built in June, 1834, chestnut shingles, all sound but much worn; oak sills six inches from the ground—not covered, perfectly sound; stakes made in June, set top down, stand good, nine years old. Nearly all the sills of barns exposed, that were cut in the winter season, only last good ten or fifteen years: so says the Deacon. He also says he easily kills all elders and briars by cutting them off to the ground in January; they will only stand one or two cuttings."

HOEING WHEAT.—Dr. EVANS, editor of the *Rural Economist*, says: "A few years ago, we planted a few grains of wheat in an unmanured piece of ground, in rows 15 inches apart, and the grains 5 inches apart in the rows; 1,093 grains of wheat weighing 840 grs. were thus planted, and carefully hoed fall and spring. This little crop was cut July 15th, 1856, and the produce weighed 162,240 grs., say 21 lbs., or nearly two-hundred fold. One single grain produced 1,000 grains of wheat, growing upon 52 stalks. This was a fair experiment, and goes to illustrate the value of cultivation on the wheat crop. The enormous yields in England are due very much to cultivation with the hoe."

NUMBER OF SEEDS IN A BUSHEL.—A correspondent of the *New England Farmer* says: "Timothy seed numbers 41,823,360 grains to the bushel, and if sown on an acre of ground, as recommended by some, would give about 6¼ to the square inch. Would not one be better than six? Clover, of medium size, what we here call Eastern clover, numbers about 17,400,960 to the bushel, and gives about 2½ to the square inch on an acre. Rio Grande wheat, fair and plump, numbers about 556,288 to the bushel, and gives about 12¾ to the square foot. Rye numbers 898,880, and gives about 20¼ to the foot."

BURNING WEEDS.—"Bear in mind," says *Evans' Rural Economist*, "that by burning weeds, we lose a valuable part of their constituents, whereas by properly constructing a heap of weeds, so as to induce fermentation in the mass, all the constituents may be saved for use as manure at the proper time. A weed heap, the receptacle of every kind of fermentable trash and dirt, will, by the end of the season, produce a large amount of manure."

TO RIPEN LATE TOMATOES.—*Hall's Journal of Health*—good authority—considers tomatoes "the most healthful of all vegetables," and adds: "The tomato season ends with the frost. If the vines are pulled up before the frost comes, and hung up in a well ventilated cellar with the tomatoes hanging to them, the 'love apple' will continue ripening until Christmas. The cellar should not be too dry nor too warm."

RUE FOR FOWLS.—*Evans' Rural Economist* says: "The growth of this plant ought to be cherished where fowls are kept; it is both agreeable and salutary to them."

KEEPING BUTTER.—The *Boston Cultivator* says: "The celebrated 'Philadelphia butter' is generally made for immediate consumption; it is seldom packed for long keeping, but is sold in lumps. As 'fresh butter' (rather improperly so called as it is salted), it has a rich taste and is highly esteemed. Much New York butter is, however sold in Philadelphia as 'tub or firkin butter,' at higher prices than any of the same *age* made in that vicinity would command. From a paper lately read before the Chester County, Pa., Agricultural Society, by D. B. HINMAN, Esq., of West Chester, we take the following extract. Speaking of some northern and Eastern dairies, he says:

"'Very little of their butter is sent to market during the warm months; it is packed in firkins, sent to market late in the fall or early winter, and we now find it in the Philadelphia market coming in direct competition with our own freshly-made butter; not only so, but we find it here in the borough of West Chester, selling at prices far above what we obtain for butter made at the same time. To me this is evidence of our disposition to go on in the good old way of our fathers, without making even a respectable effort to find some way that would be more to our interests and in conformity with the circumstances of the day in which we live.

"'I tried an experiment last summer in a small way. In December I sold several hundred lbs. of butter made in June and July, at thirty cents per lb., and have engagements from the same parties for another season. If one-half of the butter made in the vicinity of Philadelphia during the warm months, was packed on the eastern plan, those doing it would relieve themselves of a vast amount of trouble and expense, and would considerably increase their income, and greatly benefit those who have not the energy to try the experiment, by enabling them to obtain better prices.'"

ROAST HOG FOR HOG CHOLERA.—MRS. TRACY CUTLER, of Illinois, writes to the *Farmer's Advocate* of what she heard about curing hog cholera:

"A short time since I listened to a conversation between a couple of plain, substantial farmers, which put me on this train of thought. One of them had bought a large number of hogs, and brought them home. In a short time the cholera broke out among them, and several of the best of them died. He built a fire in order to burn them, so that if infecting, the disease might not spread among them. While they were roasting, the hogs got hold of them and devoured them greedily. From that time the disease was cured; not another one sickened, and those already sick speedily recovered. His friend recounted several similar instances, and said that a neighbor of his who found the disease commencing, took a ham, cut it up in slices, and fed and cured them.

"This conversation led me to reflect whether the experiment of making piggy a vegetenarian, was not really the secret of this destructive disease, and whether it would not pay to gather bones and soap grease occasionally as a treat for them.

TWIN FOALS.—"We are informed," says the *Boston Cultivator*, "that a mare owned by Capt. E. ELDRIDGE, of Wilmington, Conn., produced twin foals on the 20th of March last, which are said to be of good size and without a blemish. Mares rarely have twins, and when they do, it is seldom that both the foals live. Yet we have occasionally seen a grown up pair of twin horses."

HORSES GNAWING THEIR BRIDLES.—The *Homestead* says, "One of our horses was in the habit of chewing the rein of his mate, or some other part of the harness within his reach. We dissolved aloes and assafœtida in dilute alcohol, and washed the reins with the tincture. One trial was enough for the beast, as he did not like the medicine."

Bee Stings.—The *Homestead* says: "Bees do not sting to protect themselves or to defend themselves against injury. There is nothing selfish about the bee soldier. He stings an enemy and lays down his life in the act. When fighting among themselves, they do not die when they sting an enemy, but when they sting man, the sting is almost uniformly left in the wound, and the bee dies soon after. He fights to protect his stores, his queen and her eggs and her young. When stung by a bee, with a sharp knife or pin immediately remove the sting. Do not take it in the fingers, for that squeezes out the poison into the wound. Wet up a little clay with spittle, and apply it without rubbing, and think no more about it, and by no means rub it."

MANAGEMENT OF HONEY BEES.

The union of weak swarms in the month of July, at the North, is a matter of great importance to bee-keepers, owing to the fact that very few families of bees can endure our severe winters unless they are strong and populous in numbers.

The inexperienced bee-keeper is sure, in most cases, to commit the error of endeavoring to increase his stocks or families of bees too fast, and of wintering swarms that are entirely too small and weak to prosper.

The first swarms that issue are generally of good size, and need no doubling; but the second, and especially the third issues, are frequently so small that it would be folly to attempt to winter them, and the remedy is to join them with other swarms that come out at, or about, the same time.

I have found that swarms may be joined the same day they issue, without any fighting; and but very little contention for the mastery takes place till after the fourth day, when the queen has commenced laying eggs.

My system of uniting weak swarms, is to hive them separately, as they come out; and if two issue the same day, I join them at evening as follows:

Soon after sundown, I take the weaker swarm of the two, if there be any difference in them, and carry it to the stand of the swarm with which it is to be united; before which, I spread a sheet or blanket upon the ground, and as close to the front of the hive as possible (my hives being set upon stands but four inches high), and one edge of the sheet is drawn under the hive an inch or two, and secured there by small blocks of wood at the two front corners, about an inch thick, which raise the hive in front an inch high, while the back rests close upon the stand. The hive is thus raised in front, so as to allow the bees in the other hive to enter rapidly, which would not be the case if the hive were not raised.

The sheet now being spread in front of the hive, I then dislodge the bees in the other hive, by a sudden rap or two of one corner upon the sheet and ground, and they fall in a mass directly in front of the hive containing the swarm with which they are to be joined, and the bees immediately commence running up the sheet and into the hive very fast.

I sometimes raise the lower sides of the sheet, and throw the mass of bees against the front of the hive, in order to expedite their entering; but in most cases they will all have entered in a few minutes. There will always in such cases be a great uproar created in the hive, on the entrance of the swarm, and a combat between the queens will ensue; but before morning one of them will be killed and harmony will be restored.

Some apiarians seek for the queen as the bees are entering the hive, on being dislodged as above described, and remove her, which is a good plan, but it is not always practicable. The dead queen is generally found upon the stand, on the following morning after the union, surrounded by a dozen or two of worker bees, in a close cluster.

Two small swarms may be joined to a third one, on the above plan, and at the same time; or the union may take place at the time of swarming, if they issue at the same time and cluster separately. One or more swarms may be joined to a swarm four days old; but I do not recommend a union after that time.

As a general rule, all swarms should be doubled at least that issue after the 10th of July. This season, owing to the lateness of swarming and the backwardness of the white clover crop, may require its modification somewhat.

My readers, of course, will understand me to refer in *dates* to the latitude of Central New York.

A swarm of bees that will store up sufficient honey to carry it through the winter, should contain a *peck* at least, when in a close mass. A quart of bees are not able to store up one-fourth as much honey as four quarts can; nor can four quarts store one-half as much as a peck of bees can; the consequence is that three weak swarms might all perish if hived separately, while if all were united in one they would be prosperous. The reason of this is, that three united swarms are able to send out to the fields a great many more bees, in proportion to their united numbers, than they could do in separate hives; while their joint increase is more than *six* times as much as it would be in separate tenements, owing to the fact that it requires a large body of bees to generate the requisite heat to build combs and rear the young brood.

In some cases, it will be good management to return late swarms to the parent family, by searching for the queen and removing her from the swarm. This may sometimes be done at the time of swarming; but she is more easily found by dislodging the bees soon after sundown upon a sheet, and placing the hive near them, and as the bees spread out on the sheet and run into the hive, the queen may be discovered by those who are accustomed to thus searching for her. On removing her, the bees will all return the next day to the hive from which they issued.

The object of returning late swarms to the parent families, is because such swarms would not, probably, live through the succeeding winter, and the parent families, having become greatly depopulated by over-swarming, would be in danger of perishing without the return of such swarms; as, aside from the necessities of an abundance of food for the winter, a small body of bees are liable to perish simply from the fact that they can not generate heat enough in cold weather, to enable them to remove from one comb to another, in order to reach their stores.

T. B. MINER.

Clinton, N. Y.

FEEDING STOCK IN SUMMER.

At the last Monthly Meeting of the London or Central Farmers' Club, the subject for discussion was, "By what means can the Feeding of Stock on Pasture Land, in Spring, Summer and Autumn, be so increased as to supply the demand of our increasing population?"

The subject is one of great importance to the American farmer, and though some of the recommendations cannot perhaps, at present, be adopted in this country, we think a few extracts from the discussion will be read with much interest.

Mr. Owen Wallis, a farmer of great experience, introduced the subject. He thought the improvement in the productive powers of English pastures had not kept pace with that of the arable land. The latter had been manured at the expense of the former. It is a great error to suppose that pastures do not need draining. Stagnant water produces and supports a coarse herbage, and is destructive to the finest and most valuable grasses.

Breeding has generally, for many years past, when combined with feeding, been the most profitable part of the business. More than twenty years since, when the late Lord Spencer endeavored to persuade the farmers of Northamptonshire to turn their attention more to breeding their own cattle, he gave as a very cogent reason for their doing so, that his own home-bred steers paid him more per week from the time they were calved, to the time they were sold for fat ones, than the cattle he bought for grazing did for the last six months they were feeding. The inducement to breed is much greater now than it was then, and it should be extended wherever practicable. It is, moreover, highly important that the cattle which prevail in some districts should be greatly improved. Too many of the owners of dairy herds care nothing about the bulls they use, so long as their cows are only in-calf at the proper season, and many of their bulls are of the most ordinary character. The calves so bred are bought by dealers, and sold by them for rearing; and the result is very often a very mongrel kind of shorthorn.

Another cause of the high price of cattle is the very imperfect manner in which too many of them are now fed. We give a very high price for what may be termed the raw material, and then waste a large portion of it. It is, in my opinion, a positive waste to send thousands of young beasts annually to be slaughtered that are barely in a half-fat state. This, however, is commonly done in the autumn of each year. These beasts are now grazed at so early an age that common pasturage alone does little more than support their growth; they are consequently unfit for the fat-stock markets, and ought to be sent, if sold they must be, to the markets for store cattle. Thousands of them having attained maturity, would make really fair good beasts if kept another year, and are worth much more to keep than to sell. In order to get an opinion on which reliance can be placed as to this point, I wrote to Mr. William Collins, who is a cattle-salesman of great experience in the metropolitan markets, asking him what, according to his judgment, would be the increased weight of the cattle sent to market during the grass season, provided those sent were really and fairly in a fit state for slaughtering. His reply is, that they would, with only a little additional feeding, weigh, on an average, ten stones [80 lbs. dead weight or 100 lbs. live weight,] per head more than they do now. He estimates the average weight of those sent to market from the 1st of July to the end of November at eighty-two stones, of 8 lbs. to the stone. The increase, therefore, of only ten stones each would give a large additional percentage to our present supplies. He states that other salesmen, whose opinions he asked, estimate the grass-fed beasts for the above period at only seventy-six stones.

From the above evidence it is clear that a very large proportion of the cattle at present sent to market are very insufficiently fed; and we are now to consider in what way the defect can be remedied. I have already hinted that it is by the use of cake, and other artificial food, in conjunction with summer graxing, that we must look for a greater supply of really well-fed beasts, and the gradual but permanent enlistment of our pasture lands. * * * But before cake or meal can be extensively used on pasture land, proper accommodation must be provided, and arrangements made for the purpose. Among other things, the large fields must be divided, for it would be impossible to give either to a great number of beasts in one field; for before the whole could be given out, the first portions would be eaten, and the master beasts would then disturb the weaker ones, and rob them of their fair share of the food. The consequences would necessarily be, that some would get too much, and others none. I consider there should not be more than fifteen beasts together, but certainly twenty ought not to be exceeded. Indeed, the smaller the lots, the better they will do. Moreover on moderately small fields, irrespective of artificial food, a higher percentage of cattle can be grazed, and consequently more meat can be produced per acre. This is owing to the circumstance, that in small fields the land is of a more uniform character, and grazes evenly; whereas, in large ones, some parts are eaten closely, while others get coarse. Cake can be given in small boxes set about the grass, giving a box to each beast. Some persons think boxes unnecessary, and give it on the ground; but I can not but think that some of it must be wasted, and prefer to use boxes. If given on the ground, it should not be broken too small, and the dust should be screened out of it, and given to sheep. Mr. Hudson, of Castle Acre, informs me that he gave it in this way, and that by throwing it on the roughest parts of the pastures, the cattle eat up the coarse grass very barely in consequence of the particles of cake which adhered to it. There is this great advantage in this plan, that it can be adopted at any time, and almost under any circumstances. But to carry out the system in the most efficient manner, there should be hovels in the fields, suitable for the accommodation of the number of beasts they will graze. I am quite of opinion that hovels are quite as much needed for shade in summer, as they are for shelter in winter. We all know how much cattle often sink in hot weather in consequence of racing about the fields when gadding. If they were tied up in sheds during that time, and fed with a portion of either cake or meal, and a small quantity of either good hay or chaff given to them, this waste would not only be prevented, but they would be rapidly gaining flesh. I am of opinion that under no circumstances can cake, meal or hay, be given with greater benefit than those I have described. As to the most suitable sheds, I am of opinion that those with low-slated roofs are the most costly, and also the worst. They are intensely hot in summer, and cold in winter, two faults most desirable to avoid. I should greatly prefer to have them either well coated with thatch, or covered with thorn or gorse faggots, and sufficiently thatched to keep the wood dry. Good wide mangers are necessary, in order that they may be used for either cake or hay.

As to whether cake or barley, bean, or other meal is most suitable, in conjunction with grass, will depend upon their relative value, and also upon the state of the grass. When that is in a very succulent state, straw or hay-chaff and meal would be the best corrective; whereas in hot weather, when the pastures are in a dry state, cake and hay might be given.

It may be argued that land treated as I have recommended would soon become too much manured. *When* that occurs, other fields should be selected, and the over-manured ones mown for a time. Besides, the manure collected in the sheds, and that gathered in the fields where laid too thickly, might be applied to the fields usually mown, or to the store pastures.

There is only one other point on which I need trouble you: that relates to the practice of soiling cattle. On arable farms with artificial grasses, or with water-meadows that can be flooded at pleasure, and a regular supply of grass depended upon, this practice may answer. On old upland pasture I doubt its being at all successful. It is generally so late in the season before it is fit to mow, and, when it is so, it would so soon outgrow the wants of the cattle; and with variable seasons also it would be next to impossible so to regulate the supply of cut grass as to suit the demand. Moreover, this system on a large scale would require an amount of both cattle and labor much beyond the present supply of either, and would on that ground alone be impracticable.

As to the quantity of cake it is desirable to give, I com-

mence with 4 lbs. per day, and finish with 6 lbs., giving on an average 5 lbs. per day. If this is continued for six weeks, it will amount to 15 stones per head, which, at about the average price of cake during the summer, will not exceed 20s. We know from our experience that between a ripe bullock and one that is not well up to the mark, there is commonly a difference of more than double that sum in their respective prices, supposing they are equal in size. If, therefore, by an outlay of £1 we receive £2, the investment is a profitable one. But supposing it to be rather less than this, we must not forget the extra number of beasts that can be fed on the same quantity of land; and the rent, rates, and taxes being the same in both cases, a further additional profit is thus obtained, to say nothing of the rapid improvement of the soil.

Mr. HUDSON (Castle Acre) said he had but a few observations to offer on the subject contained in the excellent paper just read by Mr. WALLIS. He might be mistaken, but he had understood Mr. WALLIS to recommend that the dust of cake should be given to sheep. He (Mr. HUDSON) preferred that the dust should be given to the cattle with cut hay in boxes; for having used a great deal of cake for sheep, he thought it desirable that they should have as little dust as possible. They would not touch the dust, but they would eat the cake in pieces the size of a hazel nut. Cattle would eat it with cut hay, but sheep would refuse it. He agreed with almost every thing that was stated in Mr. WALLIS' essay, and he thought that, considering the large demands that were made on the feeders of cattle in this country, they could not keep pace with the consumption unless something new was discovered for summer feeding, and he did not think of any thing that would supply the market better than a little additional food in the shape of cake when the cattle were at grass. Many persons, he was aware, objected to that; he not only consumed a great deal of cake in the winter season, but he had no objection to continue it in summer also. He had done it for many years, and had experienced the benefit of the practice. His cattle were always then ready, one lot to take the place of another, as they came ready for market. He believed also that it had the effect of improving the pasture land, whilst the system of feeding on pasture and folding on arable land during the night robbed Peter to pay Paul.

The Chairman: Can you give us any idea of the breed of cattle best fitted for the purpose?

Mr. HUDSON: The best of every breed. Why feed bad cattle? The Shorthorned cattle were decidedly the cattle with which to feed the people of England. True, they might better please the pampered palate of the rich by the Highland Scot, or the beautiful little Devon; but the million wanted a heavier class of cattle, and the million were the farmers' best customers. As long as they could earn plenty of money they would have beef, and they ought to have plenty of it.

Mr. W. SHAW (Northampton) said his friend Mr. O. WALLIS had had so much experience in the use of cake in feeding cattle, both on plough and grass land, that he was quite sure any one would have great difficulty in questioning anything he had laid down. For his own part, having for years brought out his early-fed cattle on grass with the assistance of cake, the difficulty he had encountered in its use was this: for want of shelter the cattle were frequently running about at mid-day at the rate of ten miles an hour, when they ought to be quietly resting under sheds or in yards. It mattered not, therefore, what they were given until they were provided with good hovels, for a hovel was of as much value in summer as in winter; and unless the large grazing fields were reduced in proportion to the quality of the land, he did not think they would ever realize the full value of the animals. It was wholly different to arable land, where the fields could not be laid too open; but in grazing he was not an advocate for too many beasts lying together. He believed it was of little or no use to try to feed beasts as they ought to be fed, and not go to market half-fat, until the grass land was brought to its full value by subdividing it and providing hovels. He had gone fully into the use of cake on grass lands, and he had found it to be absolutely necessary to have hovels and sheds, so as to completely develop the results of hay and cake. Mr. CONGREVE had reminded him that he might also touch upon the large amount of money they were expending on grass land in proportion to return, and that leases would conduce materially to success. He was bound to say, however, that in Northamptonshire they occupied land which descended from father to son; he could not, therefore, so far as that county was concerned, see that leases would be of the same value as in other parts of the country. If a good sound tenant-right, as was evidenced by the practice in Lincolnshire, was generally established, it would assist in drawing out the resources of grass land as well as plow; but he did not think that the system of holding land was any barrier to their using cake in summer for feeding their cattle with.

Mr. RAMSAY (Newcastle-on-Tyne), after speaking in terms of commendation of the paper read by Mr. WALLIS, alluded to the subject of draining grass lands, of which there were few who did not approve, although perhaps it might not be applicable to all descriptions of soil. Drainage, he observed, would never have come into play but for the great and growing demand for food for the people. He then discussed at some length the question of supply and demand, and said that the point at issue was, not exactly whether a few pounds of cake more or less should be used, but whether they were deriving a fair rate of profit from the large amount of capital which was embarked in agriculture. Prices were of course depreciated at times, and there was no branch of trade or commerce that did not experience vicissitudes. They could not lay down any rules by which meat should be 8d. or 9d. per lb., which indeed was far too high a price for the working classes, who constituted the great body of consumers; and he did not believe the feeder got a fair profit by it, when obtained by means of oilcake and other high-priced artificial food. In his opinion the great improvements which had been effected of late years in the various breeds of sheep had done more to increase the productive power of the country in animal food, than even the improvements introduced in cattle themselves. So far as he could gather, there was no comparison between the two. He did not think they could lay down any strict rules with regard to breeding and feeding of cattle. He himself was a shorthorn breeder, and had recently sent a lot to California, where they said no other description of cattle was fit to eat (a laugh). He was sure that the grass lands of the country might be improved by the application of artificial manures, and of all such manures none did so much good as bone manure in increasing the production of meat for the people. Its value had been proved in the case of milk; and if it gave more and better milk, it must of course create more and better blood.

Mr. BRADSHAW (Knole, Guilford) said the subject on the card was confined to a very limited sphere; it was, as he understood it, the larger increase of animal food from the improved condition of the pastures of this country. He had had many years' experience on the land of Cheshire. He recollected seeing at Henbury, on a farm belonging to a friend of his, Major Marsden, effects produced with bone in the course of eighteen months which were quite wonderful. Thirty-five years ago, on his own father's farm in Lancashire, he saw bones applied to the extent of three tons per acre, the price at which they were obtained in Liverpool being very low. In Surrey, where an impression prevailed that bones were of great value, he applied them to his grass lands, and found no great result. The greatest improvement made in pasture lands was, he thought, effected by folding sheep with mangel wurzel or swedes. If a little cake was given so much the better. He had 150 acres of grass land, which he intended to improve in that manner. He agreed with MR. OWEN WALLIS, that cake judiciously given to bullocks would produce very valuable effects on land, if the droppings of the bullocks were properly disposed of. He had no doubt of the capacity of this country to produce sufficient animal food to supply the growing wants of the people. They might rely upon it that adequate means of doing that would be found. However, that was a vast subject, and he would not attempt to enter into it. No doubt when the cultivation of land was discussed at some future period, they would all have had a little more experience with regard to steam, and many might have become converts who were now opposed to it.

Mr. FISHER HOBBS thought it might be laid down as a fundamental rule, that upon grass lands, as well as upon arable, drainage was a necessity. He concurred in the opinion that the use of oil-cake was a very good means of carrying out the improvement of grass lands. He had, like many other gentlemen, seen land doubled, and more

than doubled, in value, in consequence of oil-cake to a fair extent having been given to beasts during the summer months. He knew many pastures in this country which would at one time scarcely maintain a fair amount of store stock; oil-cake, however, having been used, it was found that animals fed with grass fattened very well, and within five years at least ten per cent. more animals were fattened upon those very pastures. He was persuaded that oil-cake was a simple and comparatively inexpensive mode of improving the grass lands of this country, and of making lands which were previously store pastures, with good management, fattening pastures.

As regarded inexpensiveness in sheds, an old friend of his recommended sheds that, to use his friend's sporting phraseology, were "got by wood-stack out of clay-pit." Perhaps those inexpensive sheds which broke the wind and protected animals from storms were the most useful.

Clover Roots.—At the meeting of the Board at Watertown, Pres't Geddes had some clover roots furnished him by a farmer in Onondaga county, one of which measured three feet eight inches, and the roots entered the ground as tap roots. The longest one was evidently broken off in taking up, and probably was six or eight inches longer, making it more than four feet; the others nearly as long. Such appendages as these to the clover plant, in friable soil, may well account for the great value of this plant as a fertilizer.—*Journal of the N. Y. State Ag. Society.*

Several years ago, Mr. Lawes had some roots of wheat carefully taken up from his experimental wheat field at Rothamstead, England, for the purpose of analyzing them. It was found necessary to dig a hole several feet in diameter, and much care and labor were required to trace the small, fibrous roots, and pick out the soil from around them. Some of these roots were taken out upward of *nine feet in length.* The soil was a rather heavy loam. Instances are on record where wheat roots by the side of marl-pits or other excavations have extended to even a greater distance!

We have little doubt that the wheat plant throws out a greater number of roots than the clover plant, and that they permeate the soil more completely than clover. The clover roots probably go deeper than the wheat, but whether the fertilizing effects of clover are attributable to this fact is, to us, an open question.

Hoeing Carrots.—The Rev. Mr. Freeman, of Parma, N. Y., informs us that he finds the Dutch, or scuffle, hoe the best for cleaning carrots. You can work nearer the young carrots without risk of injuring them, and as you work backward you do not tread on the weeds after they are cut off. Where the ground is not stony, he usually passes through the rows with a rake, as soon as the carrots can be distinguished, working it back and forth to detroy the weeds, and smooth the ground. This he thinks is a great saving of labor. In a few days afterward, he hoes them with the Dutch hoe.

Mowing Grass Lands.—Fisher Hobbs, of England, well known in this country as a breeder of Essex hogs, at a recent agricultural meeting remarked—

"He had heard it stated that some of the finest old grazing pastures in England, including some in the Vale of Aylesbury, were some years ago very much injured by being over-mown. He had always considered that the farmers of England never paid sufficient attention to the varieties of grasses which they cultivated on their pastures. They paid great attention to varieties of root and varieties of wheat, but little attention to the varieties of grasses on their land. It had been said by some of the best authorities on the subject, that a square foot of turf should produce at least 28 varieties of grasses. Many of the best grasses, if mown at certain periods of the year, were thereby checked, and coarser grasses were apt to take their place. He was therefore very much inclined to the opinion that pastures which were adapted for the production of beef should seldom if ever be mown; and that low lands, where coarse grasses fructified the most, should alone be given to the scythe."

Manuring Grass Land.—At the same meeting, Mr. Hobbs said:—"Before sitting down he wished to remark that having tried several modes of manuring permanent pastures, the conclusion at which he had arrived was this: where a large portion of the land of the ferm was arable, and where there was plenty of manure made from roots and straw, commonly called farm-yard manure, there was nothing so good as a small quantity of unfermented manure spread upon the land, during wet or tempestuous weather in June or July, as soon as possible after the grasses were mown. He himself generally applied 8 cubic yards per acre. He might add that he had found the bean-straw cut into chaff produce an extraordinary effect when applied as manure. Having had experience with regard to some twenty or thirty different manures, he had come to the conclusion that oil-cake was the best for improving first-class grazing lands."

The oil-cake, of course, is not used directly as a manure, but fed to the animals on the grass land.

Canada Thistles.—Probably this noxious plant is the most difficult to eradicate that exists. It may be cut down with the scythe or the hoe twenty times in a season, and yet it will flourish. In gardens it may be dug out with a spade by perseverance, or it may be killed by an application of a spoonful of salt to the top of each plant, cut off even with the ground. In the field, it has often been effectually eradicated, by mowing the plants down just before the seed matures, a few hours before a rain. We say this *has* often killed it; and it has frequently failed to be a remedy, the reason of which, we think, may have been owing to the rain not following the operation soon enough, or the cutting was not performed just at the right stage of the growth of the thistle.—T. B. M.

AMERICAN SHORT HORNS IN EUROPE.

THE *Irish Farmers' Gazette*, of May 11th, has a portrait of a short-horn bull, "Our American Cousin," "bred by SAMUEL THORNE, Esq., Thorndale, Dutchess Co., N. Y., imported by FITZWILLIAM WELSH, Esq., Trough House, Limerick, May, 1861," and remarks:

"It would be altogether superfluous were we to treat our readers to a long-winded dissertation on the special merits of short-horns. Every one knows them, and all acknowledge their great value. Whether on the rich plains of England and Ireland, in the plentifully supplied yards and feeding houses of the Scotch farmers, on the prairies of the far West, or the savannahs of Australia, they are equally at home. They possess in a high degree the 'come, see, and conquer' order of merit, and they are to all intents and purposes the aristocracy of the bovine race.

"Although England is undoubtedly the birthplace of the breed, yet that portion of the United Kingdom no longer maintains its position as the only source from whence clear and undefiled blood may be drawn. Freely opened purses have now rendered England only a sharer where, at one time, she was sole possessor. Hence, for some years there has been a system of mutual interchange amongst breeders in the three great divisions of the kingdom, and this has been productive of so much advantage to all parties that it is annually extending. Of late, however, it has assumed a new feature, and even America has been brought under the operation of this system. Mr. SAMUEL THORNE, Thorndale, Washington Hollow, Dutchess Co., N. Y., occupies a very distinguished position as a short-horn breeder, having formed his herd, at very great expense, on some of the best blood which could be procured in Great Britain and Ireland. Thus, amongst other animals of high mark he owns Duchess 66th, bred by the late Lord DUCIE, and for which 700 guineas were paid at the sale of his lordship's herd, her calf being sold at the same time for 300 guineas; also, Fredrica, Lalla Rookh, Buttercup 2d, Miss Butterfly, and Pearlette, from Col. TOWNLEY'S herd; Peri, bred by Mr. BOLDEN; Minerva 4th, bred by Mr. TANQUERAY; Victoria 26th, bred by Mr. R. HOLMES; Maria Louisa—by Hopewell, out of Rose de Maux—from the late Mr. ST. GEORGE GRAY'S herd; and, finally, without enumerating the rest, he has been using those famous bulls, Grand Turk (12,969), and 3d Grand Duke (12,961).

"Such a collection naturally drew many longing looks 'across the western ocean,' until at last the desire on the part of some breeders on this side became a fixed determination to have, and accordingly we find that toward the close of last year Mr. LANGSTONE, M. P., Sarden Lodge, had hired '5th Duke of Thorndale,' a son of Grand Turk and Duchess 66th, from Mr. THORNE, and that Messrs. ROBINSON, Clifton Pastures, and CHARLES HOWARD, of Biddenham, had entered into a similar arrangement for Mr. THORNE'S "2d Duke of Thorndale," by 2d Grand Duke, dam Duchess 71st, a 650 guinea daughter of Duchess 66th. During the course of last autumn the occupants of the Thorndale pastures were diligently examined by a very plucky specimen of an Irishman—Mr. FITZWILLIAM WELSH—who had determined upon establishing a thoroughly good herd of short-horns at Trough House, Co. Clare. The magnificent proportions of Lalla Rookh very soon took his fancy, and he lost no time in securing her splendid bull calf—then about nine months old—by Grand Turk. Prudence, however, dictated the propriety of leaving the young 'un with her dam for some time longer, and it was only, therefore, just before Easter that a special ambassador was sent over to America for the purpose of attending on 'Our American Cousin' in his various perils 'by flood and field' in his passage from Dutchess Co., New York, to Co. Clare, Ireland. Fortunately, all has gone well, although the voyage was both stormy and longer than usual, and on Sunday last the illustrious stranger reposed, for the first time, on Irish soil, where we trust he is destined to spend many useful days, and be the means of filling many entries in our Royal prize lists.

"Having been afforded an opportunity of seeing 'Our American Cousin,'—the name given him by his new owner—we must say, the first point which struck us was his great size for his age. He was calved on the 13th of December, 1859, but he looks nearly as large and furnished as many two-year-old bulls. This feature he inherits from both sire and dam, and he promises to be fully as large in every respect as Grand Turk. His head and eye tell at once of his sire, and the former is well set on to a moderately lengthy neck, which runs into a deep, wide breast. He is very rich in the flank, and his quality all over is all that could be desired. His constitution is evidently remarkably good; his hair is beautiful, and of a beautiful color. Notwithstanding the fatigue of his voyage, he looked wonderfully fresh and lively, weighing over 13 cwt. as he stood. His first cost was $1,000, and adding freight and all other expenses, he now stands Mr. WELSH $1,200, or, say, £240, and he is well worth every farthing of the money. Everybody knows what Grand Turk was and did before he left England, and Lalla Rookh was the winner of the first prize at the great Yorkshire show in 1853, and the first prize at the Royal North Lancashire show in the same year. Upon both these occasions she beat 'Vestris' and the next year, Lalla Rookh being in America, 'Vestris' carried all the first prizes in her class wherever she was shown; 'thus showing,' as the Thorndale catalogue remarks, 'that Lalla Rookh's equal was not left in England.' She was also winner of the first prize as the best cow at the United States show at Philadelphia in 1856. We may also state that she is a remarkably prolific cow. With such a parentage, combined with his own good qualities, we feel justified in thinking that 'Our American Cousin' will prove creditable to Mr. WELSH'S discrimination, and profitable both to him and to the country. We are glad to see that Mr. OLDHAM'S ready pencil has been, as usual, very successful in catching a correct likeness of this first instance of a system of interchange,—so far as Irish breeders are concerned—but which, we should imagine, is by no means likely to be the last.

"The object which Mr. WELSH has in view in importing 'Our American Cousin,' is to cross on the foundation of a herd which he has this season

re-commenced on a very select scale; and now that the south of Ireland occupies a very prominent position in short-horn breeding, we trust that with those few top animals, he will in due time appear in our show-yards, and in those of the sister kingdom, as an A 1 breeder and exhibitor."

The New York *Observer*, of May 30th, says:

"Some weeks since, we noticed under the head of 'The Tide Changed,' that SAMUEL THORNE, Esq., of Thorndale, Dutchess Co., this State, had rented two of his celebrated family of short-horn bulls in England, etc.

"Mr. THORNE has recently returned from abroad, and we have now to notice the sailing from this port on Saturday last, on the steamer City of Baltimore, for Liverpool, of six bulls and one heifer, all from Mr. T.'s herd and of his own breeding.

"During his absence, Mr. THORNE visited the principal short-horn herds in Great Britain, and these animals just shipped are the result of arrangements entered into by him with some of the most prominent breeders in the old country. They are of the well known Duchess and Oxford tribe of short-horns, and can but show to the English breeders the fallacy of the oft-expressed idea, that short-horns deteriorate in this country.

CULTURE OF WHEAT.

WE make the following extract from a report of a discussion at a recent agricultural meeting in England:

"RICHARD JACKSON said: As a rule that admits of no exception, wheat likes a solid bed. In stiff land we have it naturally, and our greatest care must be exercised to prevent it being reduced so fine that in wet weather it will run together like plaster. A good summer's fallow for that kind of land is the best preparation for wheat, but it should be prepared during fine weather. I have always found it best not to cross-plow, but simply keep turning the furrows back. It has these advantages; if the weather sets in wet it is always in the right form, and you can plow much deeper in that way with the same strength. To produce the solid bed for wheat on land naturally too tender, the first thing I find recommended is sowing wheat on clover ley, but at the discussion held here some time since on the system for this district, it was condemned on account of its proneness to make the land foul. The next plan proposed is to use the land presser, and to that I entirely assent. The next is to work the land as wet as it can be worked, but in this locality I have always found that any land sown wet, has invariably produced plenty of annual weeds. You will see, gentlemen, that the one object aimed at by all is a solid bed, and it will be for you to decide to-night which is most suited to our district, or if any improvement upon them can be suggested. I have always found it best to sow stiff land early, rough and dry, and as the soil becomes more porous in quality, to sow later and damper, but never wet.

With respect to sowing wheat after any other crop, I think the only requisites are, that the land should be clean, should be well plowed (not too deep) for a seed bed, and after the winter rains to give the requisite firmness by rolling, &c., it seldom happens that wheat loses root before the dry winds of March, unless from slug. In all tender land sown with wheat, the rolling should be attended to when the weather admits, although other work might seem to demand attention at the same time.

Mr. HOPE, JONES agreed with Mr. JACKSON that very strong land should be prepared in the summer, and sown so that the seed bed should be tolerably dry and porous, but that light spongy land should be plowed later, and when the land was wet, for the action of the plow in turning the furrow would press it and help to consolidate the land, and he thought it would be desirable to wait for wet weather for working such land.

The chairman, Mr. W. TURNER, considered it very important that after the wheat was sown the land should remain rough, the clods sheltered the plant during winter, and prevented it running together, which our land generally did if reduced fine. It was desirable to plow and sow wheat on light land in moist weather.

BE KIND AND CONSIDERATE TO YOUR HORSES.—THE following remarks of Mr. RAREY should be pasted in the hat of every man who has anything to do with horses:

"Almost every wrong act the horse commits is from mismanagement, fear, or excitement: one harsh word will so excite a nervous horse as to increase his pulse ten beats in a minute. When we remember that we are dealing with dumb brutes, and reflect how difficult it must be for them to understand our motions, signs, and language, we should never get out of patience with them because they don't understand us, or wonder at their doing things wrong. With all our intellect, if we were placed in the horse's situation, it would be difficult for us to understand the driving of some foreigner, of foreign ways and foreign language. We should always recollect that our ways and language are just as foreign and unknown to the horse as any language in the world is to us, and should try to practise what we could understand were we the horse, endeavoring by more simple means to work on his understanding rather than on the different parts of his body."

AMERICAN IMPLEMENTS IN EUROPE.—There can be no doubt that American forks, rakes, &c., are superior to all others. The last Journal of the Royal Agricultural Society of England contains a treatise on the Agriculture of Denmark, in which the writer says:

"Some years ago a very clumsy, heavy, wheel-plow was in common use; it required two men, with four, sometimes six, horses. This is now entirely superseded by the swing-plow (after Scotch or American models) which requires only one man and two horses, and does its work better. The hand implements have only attracted attention of late years; *those now used are generally made after American models.*"

We trust that our manufacturers will see to it in time, and spare no pains to be well represented at the Great Exhibition in London next year.

PUMPKINS AMONG CORN.

A writer in the N. H. *Journal of Agriculture* says:

"Many farmers plant pumpkins with their corn. A few may not injure it perceptibly. It is believed by some that it takes as much nourishment to grow a good sized pumpkin as a good hill of corn. If this be the case, where a number of loads are grown to the acre, we think the pumpkin cannot be of so much value as what the corn is diminished."

The sentiment here expressed is held by many. Now, who has ever known that pumpkins injured corn? Uncertain knowledge is no knowledge at all, so to speak. Who has any knowledge of pumpkins injuring the corn crop?

The corn has the first chance at the sun and air, at the dew and showers, at the soil too, and the manure. The pumpkins are planted later, and where the corn fails or is thin, or perhaps are planted uniformly over the field, and at most there will not be more than one pumpkin vine to twenty-five corn plants. Corn takes one class of substances from the soil, the pumpkins quite a different class, and so it seems to us that with the knowledge of many a fine load of pumpkins raised among corn, and no proof that materially, or even any, less corn is raised, it is safe to plant pumpkins with all small-stalked, low-growing kinds of corn, at any rate. If the land is in good condition, the amount of fodder lost by using a small-stalked variety of corn will be more than made up by the yield of the pumpkins. Large varieties of corn shade the ground so that pumpkins seldom do well.—*Conn. Homestead.*

This is a question of considerable practical importance. We think a few pumpkins may be grown amongst the corn without material injury, but too many would rob the corn of moisture and of nourishment. Will our correspondents give us their views on the subject? Are we to understand from the *Homestead* that they plant the pumpkins after the corn is up, in Connecticut? Here we plant both together.

WAR! WAR!

Yes! War for every farmer in the land. While preparation for war by the government is taking such gigantic dimensions, let every farmer take heed to make like preparations. For the war that he must wage is not against treason or rebellion,—which can always be put down by adequate force—but a war that can not be put down at once, though a million of men were at your service.

Your warfare is truth against error, virtue against vice, right against wrong, mind against matter, skill against stupidity, sagacity against short-sightedness, thrift against unthrift, industry against laziness, energy against indolence, intelligence against ignorance, economy against wastefulness, deep plowing against shallow skimming, the dry and mellow tilth of soil by underdraining against the cold sogginess without underdraining, and invention, skill, science, philosophy and eternal vigilance against thistles, pigeon-weed, snap-dragon, docks, daisies, and noxious weeds in general and pestiferous insects in particular.

What were it to wipe out all cottondom from the face of the earth, to exterminating an army of the wheat midge or Hessian fly from a single ten acres of wheat? War creates its exigences and gives licence to act outside the ordinary course of things. Hence those volunteers of ladies for the army to prepare bandages, lint, etc., and to nurse in the hospitals of the wounded and dying. The warfare of farming will make it equally meritorious for the offer of lady recruits. As editors throughout the land have been very industrious in giving advice to plant and sow an extra amount of grain, which is being generally heeded, no doubt many is the lady that has planted her "extra hill of corn," and if lady recruits do not come to the rescue, many is the hill of corn that will be wounded and the field that will perish under the scathing enemy of weeds and neglect. Come, ladies; it will help as much in the great cause to feed a hungry soldier as to nurse a sick one. It is equally meritorious to care for both. Labor in the field will not blanch your cheeks nor rob you of refreshing sleep. So don your broad brimmed flat and take your hoe in hand; if your hands get tanned, it will all come off when the war is over. If you find a spectre from a pot of baked pork and beans, "all crump and brown," haunting your stomach before the dinner bell rings, do not be alarmed: it is the vigil of nature's own sentinel; and moreover the fragrance of the cooling and invigorating breezes that sweep over the field and the balmy ones from the new-mown hay come not to the drawing-room and parlor. And how it would stimulate those far away from home, in the camp or on the battle-field, to know that their sisters and lady friends at home had taken upon themselves the sterner duties of the out-door labor.

Let every laborer be up betimes and away to the fields, while the girls milk the cows and do the chores. If the free States ever had solid work to do, it is now before them. A million dollars per day is not a high estimate for their expenses for the first year of the war, and nothing short of labor can produce the means to meet this vast amount. But with economy, frugality, industry and intelligent and well-directed skill on our farms and in our shops and stores, we can pay every dime, and build a Pacific Railroad into the bargain.

W. L. CURTIS.

Near Clyde, Ohio.

LAW TO PROTECT FAIRS.—The Legislature of Ohio has passed the following enactment:

"That it shall be unlawful for any person to exhibit or show any natural or artificial curiosity for any price or gain, or set up to let or use for profit any swing, revolving swing, flying horses or whirligigs, within one-fourth of a mile of the fair ground of any agricultural society in this state, while the fair of such society is being held therein, unless such person shall first have obtained the written permission of the board of such agricultural society to make such exhibition.

"That if any person shall violate the provisions of this act, he shall, on conviction thereof, be fined in any sum not less than one nor more than one hundred dollars; and all moneys derived from the violation of this act shall be appropriated to the support of common schools."

LOSS OF YOUNG PIGS.

Eds. Genesee Farmer:—Your correspondent, C. Wood, of Raleigh, C. W., attributes the loss of his young pigs to the oats he fed the sows. I lost the litters of three sows this spring, from the sows eating their young, and I lost five sows in giving birth to their young, being to this time all the breeding sows that have littered this spring; and they had no oats, but shorts, middlings, and turnips; and like his sows, they "*were well cared for, the sows were in stables, with good dry bedding,*" and to that cause alone I attribute the loss of my five sows and eight litters. In former years, I let my breeding sows run about and bed themselves where they chose, and never lost a sow or litter, although they then had in some years plenty of oats. My neighbors attribute my loss exclusively to the sows being confined in pens and not allowed to range in the open air, which at breeding times keeps them close behind, strangling the young pigs in their exit into this world, and taking so long to come out that some remain behind and the sows die. Nearly all these young pigs were born dead, although fully matured, showing that they were killed in transitu. Your correspondent can now have two sides of the pig question, and can judge whether oats are the cause of such consequences.

Rockwood, C. W., May, 1861. HENRY STRANGE.

Management of Sheep.—In the March number of the *Genesee Farmer*, Mr. Harmon gives it as his opinion that sheep will do better without much run. I think sheep will do better to have a small yard to run in, than to keep them confined in a close shed. Sheep need exercise and fresh air as much as a human being. Again, he says, if there are old ewes that begin to lose their teeth, they should be put in with wethers past three. I can not agree with him there, for if you put old ewes in with wethers past three years old, they will stand a very poor chance at the grain trough, or any where else. Again he says from fifty to one hundred are to be kept in a flock. My opinion is that sheep will do better in small flocks than large ones. He says that sheep pay the best of any kind of stock. That is true. No stock is as profitable as sheep. D, E. B.

Tobacco for Sheep Ticks, &c.—In the month of June, 1860, soon after shearing sheep, I discovered many ticks on the lambs, eight in number. I bought two pounds of plug tobacco, cut it fine, boiled it in a little water, put it in a five pail kettle, filled it with water, and put the lambs in, taking care to keep their heads out. The next day I examined and could find no live ticks on them.

At that time I had twelve hills of cucumbers attacked by both the small yellow and the black bug, in numbers sufficient to destroy them in a few days. I applied the remainder of this liquor, together with the leaves, three times. The result was, the bugs left, the vines grew well, and nothing injured them during the season.—E. S. Buck, *Elba, N. Y.*

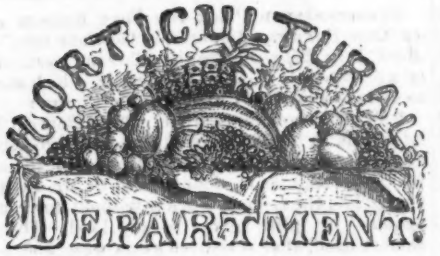
Horses—Fast Walkers.—Take them when young on a level road, and make them walk just as fast as they can. Do so daily. Never let them start to trot, and the improvement will be great.

Unprecedented Price for Four Bustles and an Old Bonnet.—Under this facetious title, the *Mark Lane Express* gives the following particulars of a private sale of short-horn cattle, which seems to include a rival to Cradock's Old Cherry:

"Mr. Wood, of Castlegrove, county Donegal, has lately sold to Mr. Carr, of Stackhouse, two heifers and two six-months calves, offspring of his cow Bustle (a daughter of Bonnet, bred by Mr. Booth), for £1,200, the *bona fide* price, without any 'luck-pennies' or 'gifts again' of any kind. The old Bonnet itself, after seventeen years wear and tear, being still considered in the height of the fashion, has since been purchased by Mr. Carr for double the price realized for her at the Killerby sale in 1852, and is now supposed to be five months in calf to War Eagle. Mr. Wood retains Bustle, though a very high price was offered by Mr. Carr for her. She is a cow of great substance, good ribs and loins, extraordinary twist, and most perfect shoulders and crops, her only fault being that her hips are a little more prominent than desirable. Mr. Wood is also still in possession of the 'Norma' tribe, whose daughter Coquette, and granddaughter Ciboulette, now two years old, by Prince Arthur, are magnificent specimens of the short-horn. Of grand and symmetrical proportions, and with ribs and loins seldom equalled and impossible to be surpassed, Coquette has much the character of Mr. Booth's Windsor prize cow, Plum Blossom. Mr. Wood has often been urged to exhibit this cow, but her tendency to lay on flesh is so great that he has wisely abstained from endangering her breeding properties by making her up for show."

"Make Hay while the Sun Shines."—There is no adage in existence, that comes "home" to the farmer with more force than does this at this season of the year. Not a day nor an hour of sunshine should be wasted by the provident farmer during this month, so long as he has an acre of grass ready for the scythe. Those farmers who have hired men to employ and to pay, at $1 or more per day, should be up as soon as the sun rises over the eastern hills, and they should take the *lead*—not say "go," but "come, boys;" and above all, set no example of telling long "yarns" in the field. It is the close-mouthed farmer who gets the most work out of his men; and when he hears his hands discussing the merits of the war, or of anything else not pertaining to their business, he should "shut them up" very suddenly. A gabbling man in the field, among half a dozen hands, had better be sent "adrift" as soon as possible.—T. B. M.

Hungarian Grass.—The proper time to cut this grass, when the seed is to be saved, is when it begins to turn yellow very slightly, the seed being still green, but plump and full grown. When the grass stands up well, it is best to cradle it, bind it in sheaves, and feed it out in the sheaf to stock. It is not advisable to thresh out any more seed than one wants for sowing the next season, as it is more beneficial to feed the hay to horses and other stock in its unthreshed state. Horses require but little grain when fed on this hay in the sheaf, with the seed in it. It requires great care in curing it, and considerable more sun and air than other grasses.



A NEW MODE OF RAISING PEACHES.

As most of our readers are aware, the severity of the past winter has destroyed the peach buds in Western New York, with the exception of a few limited localities; and consequently our fruit-growers are again disappointed by the loss of a crop of this valuable fruit.

In a previous volume of the *Farmer*, we suggested a method of strawing the trees in the fall, for protection during winter, by winding straw or hay bands around the limbs of the trees, but as we have never thoroughly tried the experiment, it can not be further spoken of.

L. A. Ward, Esq., of this city, has grown sixteen peach trees on four upright trellises, four on each trellis, and last fall he covered them all, from bottom to top, with carpeting thrown over the trellises and extended down to the ground, well secured and pinned together every few inches distant. On removing the covering this spring, the buds were in no better condition than those which had been fully exposed. This experiment weakens somewhat the theory that the injury received by fruit buds at times of severe cold, is not due directly to the cold, but to the action of the sun upon the buds immediately afterwards, as in this case the sun never fell upon the trees at any time after they were first covered. We have no doubt, however, but the thermometer would have indicated as low a temperature beneath the covering as in the open air. It would seem, therefore, that for a protection for this purpose to be effectual, it should be made of such non-conducting materials, and so arranged, as to prevent the space it encloses being acted upon, to any great extent at least, for some hours, by the influences of the surrounding external atmosphere.

One correspondent writes us, that to protect one tree, he "made a box of boards, about ten inches square, and put around it, bringing the limbs all inside, and then filled it up with buckwheat chaff and nailed a board on top which kept the chaff dry all winter." This plan would be impracticable with large trees, but could no doubt be well applied to trees grown on trellises.

The happiest plan we have yet heard proposed, to effect the object about which we write, is by Jasper Standstill, in the May number of *Hovey's Magazine*, and is as follows:

"Take stout cedar or other posts; sink level with the earth's surface in two rows equidistant and opposite; thereon lay a sill or framework 4 feet 2 inches from outside to outside; then take rafters 12 feet long, say 2 by 3½ thick, and place thereon at an angle of 35 degrees, which allows a slope of one inch in 12. Set those six feet apart, and extend to such lengths as space or desire may dictate. When the rafters are fixed, take galvanized iron wire and run it horizontally six inches apart; strain thoroughly, and fasten to each rafter with small staples. This will be more neat, light and durable than wood.

There may be some diversity of opinion as to the aspect of the trellis; local convenience would always control us. If running north and south, the difference would be the merest trifle. Under a vertical sun, if east and west, the north side may be planted with the late kinds.

To get well ripened wood is of primary importance, and to this end there are two methods of pruning; each has its advocates, and both can be employed to advantage if begun rightly. One system is to remove all wood buds and shoots that do not appear on the upper side of the tree, and to shorten those so that they will form *spurs*: this is the spur system. It requires double the number of trees of the following, which may be termed the long annual branch or semi-fan system, being a modification of the English system of training on walls. This method requires that the trees should be planted two feet apart, giving the trees the same slope or angle of the rafters viz., one inch in twelve. This sloping is important, as it tends to equalize the flow of sap, &c. If the trellis runs north and south, let the tree be sloped to the south; and if east and west, to the east. Much or all of the pruning in this method should be done by the thumb and finger, and under no circumstances should any foresight or undershoots be allowed to grow or remain, as they only crowd, confuse, and prevent the thorough ripening of the wood in its proper place, and on this great point hinges your success. By judicious thinning, stopping and tying in, little is left for the knife in spring, and if begun aright, nothing is more easy and simple.

Amongst the many claims this method has on the fruit grower's notice, is the easy and thorough manner the trees can be protected from the ravages of the ice king. To do which, take seaweed, salt hay, or any other strawy covering, and lay on from three to six inches evenly over the entire surface; upon this lay shutters snugly together, rendering it water-tight; the two ends may be fitted with boards, which may be open in all ordinary weather, but when the thermometer is from zero downwards should be closed.

The covering should not be removed too early, as peach buds have sometimes passed the ordeal of our winters unscathed, only to be annihilated by late spring frosts.

The shutters are admirably adapted for the protection of early vegetables, breaking cold winds, and hastening on tomatoes, cucumbers, &c.; after which, they should be stacked away for future use, and will thus answer for many years.

The foregoing is, I think, a new idea. It is intended for the million. Trees planted under glass are for the few, and then, without a heating apparatus, is a broken reed, orchard houses a *bubble*, and trees in pots and tubs TOYS."

DUCHESSE OF WINTER, OR LATE TOULOUSE PEAR.

(Poire Duchesse d'hiver ou Tardive de Toulouse.)

We give the following description of this pear, from the *Revue Horticole*, as it seems entitled to more than usual notice. Notwithstanding the numberless varieties now in cultivation, fruit-growers are yet desirous of obtaining a new variety of late-keeping winter pear, uniting in itself the many good qualities which are requisite for profitable orchard culture and marketing.

We do not think, however, that this sort will be found perfect, as new things are often over-rated, and, when grown in this country, may prove to be worthless; but, since we are under obligations to Europe for most of our good fruits, we should not fail to look with interest to any new product of the kind which is offered us from that source.

Trees of this kind have been offered for sale in France only this spring, for the first time, and, consequently, it is not yet in the hands of any American cultivator.

"The Duchesse d'Angouleme is certainly not the best autumn pear, notwithstanding the sufficient vigor of the tree, its continuous fertility, the largeness and the good quality of the fruit, cause the plantations and the supply

of the markets to be the greater part of this variety. A similar success, which no winter pear has yet obtained, seems reserved to a new fruit approved by the Horticultural Society of Upper Garonne, and given by it a name which, itself, is equal to a description, that of Duchesse d'hiver.

The specimens which have been sent us, and our own observations, together with information transmitted by conscientious fruit-growers, enable us to say with certainty some words upon this precious acquisition.

As well upon the pear as upon the quince stock, this variety unites, by exception, great vigor with great and early fertility. In the nursery, it distinguishes itself from all the others by a more active and a more prompt vegetation. The tree takes generally the pyramidal form, without developing the lateral branches so much as to injure the rapid prolongation of the trunk. Some very young specimens, planted in a row, at a distance from each other only of ten inches, have all the second year of the plantation borne fruit, (of which we possess some specimens,) while the tips of the trees indicate a growth of three to four feet. * * * * * *

The fruit, in size, form, and color, bears a great analogy to the Duchesse d'Angouleme. Still it is more hunch-backed, more irregular, commonly depressed on one side, where almost always is situated the stem in the eye, in a little channelled groove; it is also more drawn out towards the stem; in a word, it affects more the form of a bottle-gourd.

The stem, a little stronger and shorter, presents at its base a decided swelling. The eye is less shrunk. The skin, of a much more clear green, less spotted, has a red cheek on the sunny side, and at maturity takes a paler yellow tint.

The flesh is melting, juicy, sweet, and more or less perfumed, according to the nature and the exposure of the soil.

The maturity is prolonged from January into February and March. * * * * *

Possessed of good keeping qualities, it has the advantage to ripen gradually in the fruit room, thus favoring the interests of the cultivator. * * * *

The russet wood resembles that of our old Doyenne. This analogy holds equally in the leaves.

The buds set closely, are a little more prominent than those of Duchesse d'Angoulême, and have as in that variety a tendency almost equal to set to fruit.

Wine Making in this State.—The editor of the *Gardener's Monthly*, in acknowledging the receipt of a case of Isabella wine from Mr. Weber, the manager of the "Hammondsport Wine Company," of this State, says: "Though only one year old, our friends who are good judges pronounce it excellent. At many fairs, horticultural meetings, and other assemblages of parties interested in wine manufacture, this season, we have been honored as an outside member of many 'tasting' committees, with opportunities of judging the state of the 'latest offerings,' which, to our taste, have so varied between vinegar, cider, and the fashionable summer syrups, that we were getting 'out of conceit' of the ability of Eastern manufacturers to cope with Western wine. But Mr. Weber's superior samples of the genuine article warms up our faith again."

A Home-Made Syringe.—Our esteemed correspondent, Geo. E. Brackett, of Belfast, Maine, tells the *Maine Farmer* how he made a syringe for use in his garden:

"I bored a hole two feet long, with an inch-and-a-quarter "trunnel-auger," through a piece of 2x2 spruce scantling, and planed it down, taking off the corners, making it eight-square, then plugged one end firmly—this was the cylinder. I then took a stick an inch through, and enough longer than the cylinder to be easily grasped by the hand, and made a piston from it by winding woolen yarn around one end, and fitting it exactly to the bore of the cylinder. A cross peg was put through the piston-rod near the upper end to prevent its forcing out the plug; several small holes were then made through the plug, and the syringe was complete. This merely as an example; of course it may be changed to meet the means of all, as regards wood used, size of bore, &c. There should be several fine holes through the plug, some of them slanting to the centre, so as to cause a shower of water in fine streams or jets. "Poh! that's nothing but a 'squirt-gun.'" Very well, never mind the name, if it answers the purpose."

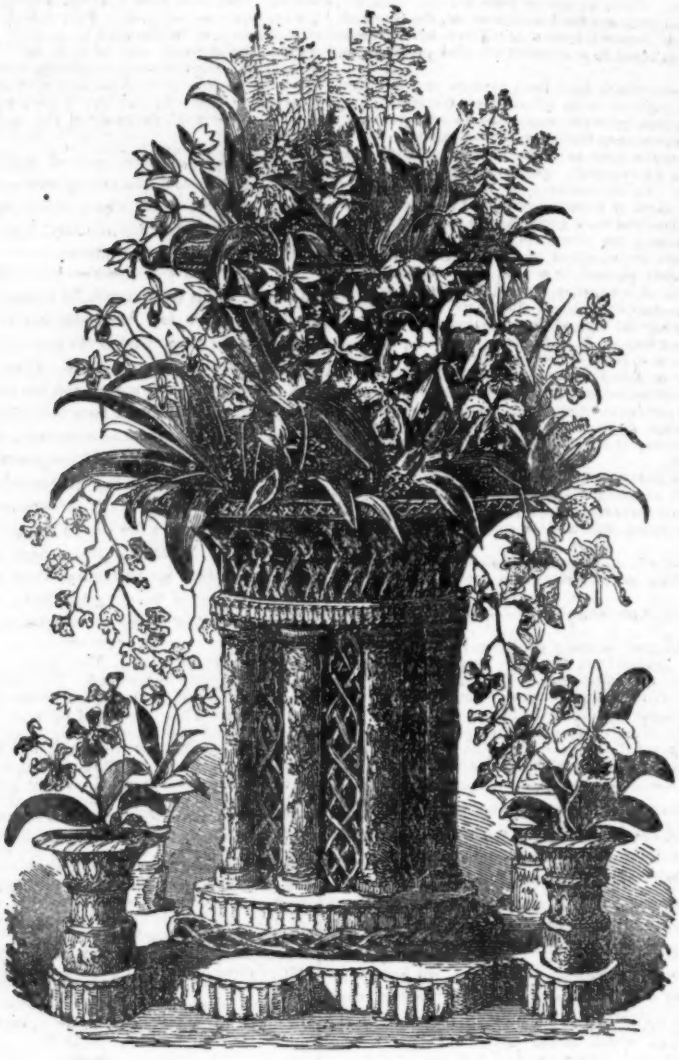
One of his trees was covered with plant-lice. On "wash-day" he took the strong soap suds, and with his syringe gave the whole tree a thorough drenching with the suds, vertically, horizontally, and obliquely. Two doses entirely routed the aphides.

Celery.—This is the month for setting out celery. Dig the trenches two feet deep, and put six inches of well rotted manure or compost in the bottom of the trench and mix it up with some surface soil. Then put six inches of rich surface soil on it, and set out the plants about a foot apart. The plants should have been pricked out in loose mould. This gives them an abundance of roots, and they will be strong and stocky. If the ground is dry, soak it thoroughly before removing the plants, so that the earth may adhere to the roots. If the weather is hot and dry shade the plants for a few days after setting them out in the trenches. When you water them, do it thoroughly. A slight surface sprinkling is worse than none at all. And this is true of watering all plants. The water must reach the roots, or it will do more harm than good.

Pruning Grape Vines.—The summer pruning of grape vines is not fully understood. The fruit spurs should be pinched or cut off at the second or third leaf beyond the last cluster. These canes, if allowed to grow on, will absorb a great portion of the sap from the roots, and to no advantage whatever, the wood not being required to produce fruit the succeeding season, where any regular system of *renewal* is adopted. Every grape grower should endeavor to secure the bearing wood for the following season, from canes that shoot out as low as possible, and if they be shoots thrown up from the head of the vine, below the surface of the soil, they are so much the better, as they will be easier to lay down for winter protection. We refer now to vines trained on *poles*; trellis training, if adopted scientifically, requires that the new wood for the next year's fruit should spring from two horizontal arm-canes, one on each side.

Besides cutting off the ends of the fruit spurs, in summer pruning, there will always be found many shoots of a small growth, that should be cut out. In all cases, sufficient foliage should be left to protect the fruit against the direct rays of the sun, while a plenty of air and light should be admitted to it.—T. B. M.

Destroying Insects and Bugs.—The late Thaddeus M. Harris suggested, as a means of destroying, or at least largely diminishing great numbers of troublesome and injurious winged insects, the burning of a bright light at night—as he found the propensity of such moths and insects to be "to fly at a light, therefore becoming their own self-destroyers." For this purpose, he used a kind of flambeau made of old rags soaked in tar or melted brimstone, and fastened to the end of a small pole. If held in the hand it could be placed near apple and fruit trees, and be the means of destroying many of the small flies which swarm around those trees during the summer evenings. He also recommended setting a torch close to the ground and near vines and plants, for the purpose of destroying those insects of the *caleopterous* class, which have a kind of coat of mail covering for their wings, which keeps off whatever is sprinkled over them for the purpose of destroying them; his own experience having been that they would easily fly into a blaze, and thus be destroyed.—*Maine Farmer.*



ORNAMENTAL FLOWER STAND IN RUSTIC WORK.

ORNAMENTAL PLANT STANDS.

In the May number of the *Genesee Farmer*, a representation and description of several hanging baskets and plants were given, and also a list of plants suitable for cultivation in them. With this article is given a design for ornamental plant stands. These are not so widely applicable as the baskets, yet in their proper place nothing can be more effective. They can be made of wood, in rustic work, or of iron or terra cotta work.

Out on the open lawn, or near the veranda, these stands when filled with flowers are exceedingly becoming, and even on the steps of a massive porch or portico they are quite in place. All the trailing plants mentioned in the article on hanging baskets are fit subjects for cultivation in these stands, together with geraniums, fuchsias, heliotropes, verbenas and petunias. The taller plants should be placed in the centre, and the prostrate or trailing ones round the edge, and should be carefully watered to prevent them drying up.

The design given is filled with orchids in flower, and where a good collection of these magnificent plants is available, then these stands will prove themselves very useful.

When made of rustic work, they will prove, when filled with cut flowers, a very elegant and effective mode of decoration, either for the drawing-room or the horticultural exhibition, and it is surprising that so few are anywhere to be seen.

W. T. GOLDSMITH.

CULTURE OF STRAWBERRIES.

Strawberry beds may be set in August and September, or in the spring; but if set in August, or early in September, the plants acquire considerable growth, and frequently produce a fair crop of fruit the following season; but plants set in the spring of the year seldom bear fruit the same season, or not enough to be of any value.

In the first place, I would instil into the minds of my readers, that strawberry plants require no especial cultivation over other species of the vegetable kingdom, in order to secure a good crop of fruit. Many people who have never cultivated this fruit, seem to think that there is a great deal of labor to be bestowed upon the plants, and after all, that there is no certainty of obtaining a crop of fruit. This is all a mistake, as this fruit can be grown with as little trouble as peas or beans, and with the same certainty of receiving a remunerating crop.

For garden culture, let the ground be spaded or plowed about fifteen inches deep, having first spread thereon a good coat of well rotted barn-yard manure; then pulverize the lumps upon the surface, and rake it over smooth. Now mark off the rows from two to three feet apart. If the bed consist of one variety only, the rows may be run two or two and a half feet apart; but if of several kinds, it is best to have the rows full three feet apart, in order to keep the plants of each variety from mixing with their adjoining neighbors.

The plants may be set in the rows from six inches to a foot apart. I think that when the plants are abundant, they had better be set close; but if they are purchased, and it is required to make them go as far as possible, set them about a foot apart in the rows. Indeed, choice varieties that are scarce may be set two or three feet apart in the rows, and the runners of the first season may be made to fill up the rows with a compact mass of plants, by guiding the runners, as they extend along the surface of the ground, and throwing a little earth upon each joint with a garden trowel, having first made a slight excavation in the ground to receive them.

Plants set early in August will sometimes throw out runners to a considerable extent; but is the following season to which we are to look for a supply to fill out the rows. By allowing the runners to take root along the sides of the parent plant, the rows may be made to become 12 or 15 inches wide, of a compact mass of plants, which I consider good management, so long as a space is kept free of weeds and runners between the rows, wide enough to walk in, and pick the fruit easily.

Some people adopt the *hill* system of culture, but I object to it, on account of the great space of ground that it requires, over the compact row system, and the greater liability of the fruit to become soiled in the dirt during heavy rains.

In setting plants in August, they will require more watering than in September, or in the spring of the year. In garden culture, probably an application of water at evening, half a dozen times, would be all that would be necessary. The plants should be set a little deeper than they grew originally, as they are liable to be thrown out of the ground by the frosts of the succeeding winter, and the deeper they are set, the less are they disturbed by the frost.

And now a few words about the *sexes* of the plants, which are male and female, and must be allowed to grow in the company of each other,—the theory being that no *pistilate*, or female plant, will be productive to the extent of its capacity, unless a *staminate*, or male plant, keeps it company. It is not necessary, however, that the modesty of these lady plants should be put to the blush, by a very close proximity of the broad, coarse-flowering staminates, with their burley stamens squinting at the fair blossoms of the pistilates; it suffices that they be a rod or more off—at a respectful distance, though I have never known of any injury to result from a closer connexion.

Some of our most experienced horticulturists recommend that a row of staminate plants be set for every two rows of pistilates, which I consider good advice, although I find that the pistilates will bear fruit abundantly, with the staminates a good deal further off. Indeed, I am now somewhat of a disbeliever in this theory of the sexes, owing to the fact that I have a bed of seedling *pistilate* plants—as pure pistilates as ever grew, situated 100 feet from any staminate varieties, and yet every flower is being set (June 6th) with fruit. Now, if it be a fact that it is necessary that the pistils of the flowers of the female plants should be dusted with the pollen from the stamens of the flowers of the male plants, how has the pollen reached my bed of pistilates 100 feet off?

The theory is—and I have to the present time been a firm believer in it—that this pollen is carried from the flowers of the male to those of the female plants, by insects—honey bees where they exist; but I have seen no bees at all upon the flowers of my pistilate plants here referred to, while the flowers of other varieties, situated nearer to my apiary, are visited by them in great numbers. This matter—the theory of the sexes of the strawberry plant—should be investigated, and the public should be informed more fully in regard to the alleged necessity of setting staminate plants near to the pistilates.

There is another class of plants, called *hermaphrodites*, the flowers of which contain both pistils and stamens; the pure staminate flowers containing stamens only, while those of the female plants contain pistils, but no stamens. The distinction is readily seen on examining the flowers of the different kinds of plants.

It should be understood that both hermaphrodite and staminate plants are self-fructifying, and require no other kind to be set in connexion with them.

Had I space, I would make extended remarks on the most popular varieties of the day; but the opinions of growers of this fruit, on varieties, change with each successive season, as new kinds are introduced. As a *bearer* merely, nothing, in my opinion, and according to published reports, equals the *Wilson Seedling*, sometimes called the Albany Seedling; but it is a little more acid than is desirable. This is an hermaphrodite variety, and requires no other kind to be set with it. It is, I think, the most desirable kind for both garden and field culture, that is now offered for sale. T. B. MINER.

Clinton, N. Y.

GOLDEN RULES FOR AMATEUR GARDENERS.

Watering Plants.—When watering, particularly newly planted crops, in dry weather, give a good soaking of water at the roots, and in all *mild* weather sprinkle over the whole plant at the same time, to prevent excessive evaporation.

Liquid Manure for growing vegetable crops may be given twice each week; and for developing flowers as soon as the calyx or flower cup begins to burst, it should be applied but once a week. A cloudy atmosphere is the best condition for giving water, and early in the evening the best period in summer months.

The liquid which soaks from common farm and poultry yards, with some soot added, is the cheapest; but where such is not procurable, add one lb. of guano to thirty gallons of water, and about a spadeful of soot—the latter tied up in a close cloth or bag to prevent it from swimming on the surface of the water. This mixture will make a liquid manure fit for all the ornamental gross-feeding plants, as Pelargoniums, Salvias, Fuchsias, Calceolarias, Achimenes, etc. To prevent drawing off or using the water in a turbid state, drain it off as clear as possible. The soot is an essential ingredient as a manure, and as an antidote to insects.

Grape Trellises against Walls.—In reply to an inquiry whether, when a grape vine is planted against a house, it is best to have the trellis some inches from it, the *Gardener's Monthly* says:

"Grape vines seem to thrive the best when they are growing between the wall and the trellis; but they are seldom trained this way, as it is often desirable to take the whole vine down from the trellis for various purposes, and the rule is to grow them on the outside; in which case, the trellis may be as close to the wall as convenient to tie the shoots to."

A Lady Gardener.—E. Y. Teas, of Richmond, Ind., in a letter to the *Ohio Cultivator*, mentions that his gardener has enlisted and gone to the wars, and that he has "engaged a young lady to take charge of the green house, at least to do the principal part of the work." We predict that the work will be well done, and that Mr. T. will have a model conservatory.

ERECTION OF A FLAGSTAFF IN KEW GARDENS.

A FLAGSTAFF of Douglas Pine has recently been erected in Kew Gardens, London. The *Gardeners' Chronicle* says:

"This superb spar, unrivalled, we believe, in Europe for height, symmetry and excellence of material, was presented to the Royal Gardens by EDWARD STAMP, Esq., a gentleman connected with the firm of Messrs. BILBE & Co., shipbuilders of Rotherhithe, and is assuredly as noble a gift as ever graced a Royal demesne; and as it towers there in an unbroken column, nearly twice the elevation of the loftiest trees which surround it, it can not fail to command universal attention.

The Douglas Pine (*Abies Douglasii*) is a native of British Columbia, where it forms a considerable proportion of the forests of that timber-laden country. Owing to its height, straightness and elasticity, and presumed durability, it early attracted the notice of the colonists as being especially adapted for masts, spars, yards, etc.; and it is now upward of two years since Mr. STAMP imported the first ship-load of its spars to Europe. Amongst these were three beautiful poles, all upwards of 100 feet, and one 118 feet long; this Mr. STAMP on his arrival at once offered to send to Kew, rounded, painted, and fitted as a flagstaff. As with many first attempts, however, misfortune dogged its course; its length was so great that the only way of transmitting it to Kew was by floating it up the river, and in its transit it was struck in the middle by a river steamer and cut in two. Nothing daunted, Mr. STAMP had the pieces floated back to Rotherhithe, spliced, with the loss of only two feet of length, and the repaired pole again sent up to Kew, where it was landed and brought to the foot of a commanding knoll in the Arboretum, on which it was intended to erect it. Here a well was dug for the reception of the butt end, 12 feet deep, bricked all round, and well ventilated; a derrick was rigged for hoisting the spar, under the direction of one of the most experienced men in such operations to be found in London; and the spar was gradually raised by a rope attached above the middle, but unfortunately too near the centre of gravity. The result showed how little idea the engineer had of the magnitude of the undertaking. The spar was hoisted to the top of the derrick, and had no sooner assumed its erect position than a puff of wind swung it round; after performing a majestic sweep in the air over the heads of the spectators, the derrick's supports gave way, and the spar came to the ground on the slope of the hill, with a tremendous crash, breaking into six pieces. Providentially no one was hurt, and though it fell into a grove of young trees and shrubs, not one of these was injured either.

On being informed of this disaster, the liberal donor answered that he was going again to British Columbia, and would gladly send to Kew another and finer flagstaff. Well did he keep his promise, for in the course of this spring there arrived at Rotherhithe for Kew a second spar, full 40 feet longer than the first, as straight, and of much greater bulk; this too was landed at Kew free of all cost, and immediately transported to the site of its ill-fated predecessor. This noble spar measured, before cleaning and rounding, 159 feet in length, the diameter of the butt end being 22 inches, and that of the top end 8 inches. It contained about 130 annual layers, which were close and well defined broad, brown, resinous rings. Immediately on its arrival Sir WILLIAM HOOKER represented to the Chief Commissioner of Works the advisability of requesting the aid of the Admiralty in its erection, which was at once accorded by his Grace the Duke of Somerset. Ten mast makers and riggers were despatched from Woolwich Dockyard, under the superintendence of Mr. JOHN ISAAC, the able inspector of mast-makers at that yard, under whose skilful directions the operation of cleaning and rounding the spar, fitting it with rigging, and coating it with a composition of wax and tar, proceeded with celerity, precision and order. Meanwhile Mr. ISAAC matured his plan for raising the spar, which was with him a labor of love, such a spar for size or beauty having never been seen at any of Her Majesty's dockyards, and that intelligent officer's experience having taught him the wisdom of treating such enormous lengths of timber with due respect, he wisely devised a plan of letting it help itself into its place, instead of hoisting it up, to disport itself like a fishing-rod in the air, as its predecessor had done. To this end he placed the spar at the foot of the hill, with its butt end pointing to its final resting place; he then had a cut made through the side of the hill to its centre, in the direction in which the spar lay; the latter was then dragged butt end foremost into the cutting, and the butt strongly propped in its final position. On Thursday, the 2d of May, by means of stout ropes attached about the middle, and passing through blocks on the adjoining trees, the flagstaff was slowly and steadily reared aloft from the horizontal to the upright position. A large concourse of people had assembled to witness this somewhat nervous operation of raising a spar of such length and weight that any untoward strain or sudden jerk might have caused it to snap across the middle. To guard against this, the top was steadied with ropes, and other precautions were adopted as the strain was felt most at one or another point in the length of the spar; and though with such admirable precautions not the slightest accident or contretemps appeared possible, still all the spectators felt a sense of relief, after now waving about in the wind during pauses in hoisting, then trembling like a willow wand as its tapering top slowly approached the zenith, it finally came to its rest as straight as an arrow, and so perfectly erect that a plumb-line dropped from the truck cut the centre of the butt.

The wire rigging for holding it in its place had all been fixed before, together with the crosstrees for steadying the slender upper half, truck, and flag halyard; and on the extreme summit a star with looking-glass facets and points surmounts the vane-staff, and reflects the sunbeams. The rigging was fixed to strong supports deeply buried in the earth and there loaded with heavy blocks of stone; and the spar was finally varnished with the same expedition and smartness as had characterized all the proceedings of Mr. ISAAC and his men, who, after witnessing the futile efforts of the heavy gale of Friday evening to injure their work, left for Woolwich the following morning.

HOW ARE DOUBLE FLOWERS PRODUCED?

IN reply to this question, the *Maine Farmer* says:

"We believe that nature never produces double flowers. They are considered among botanists as beautiful monsters. They are generally, indeed we may say always, the production of skillful management of the cultivator. The Dutch gardeners have been very successful in this kind of production. The principle of doing it is to keep the plant growing rather stintedly on poor soil, until all the organs of flowering are beginning to show themselves, then pushing it by liberal watering with liquid manures. This operation is founded on the physiological habits of plants. You have undoubtedly observed that the first exertion of the plant is to get its growth, then it stops this part of the operation and makes flowers, then this operation stops, and the whole energy is bent on maturing and perfecting the seed. This seems to be the great end and object of its life, and this done, it ceases any further action for the current season at least.

"As a general rule, therefore, they so grow the plant that the system which supplies material, or elaborates what may be called the bodily growth of the plant is not stimulated much—merely fed enough to give it fair growth. After this is done, and the energies of the plant begin to be expended on the formation of the flower, push it as vigorously as you can. Feed it high. This extra feed will expand the stamens into flower leaves, and thus you obtain double flowers. Sometimes this feeding is carried so far that every stamen is converted into a flower leaf. In this case, the flower becomes barren, and no seeds are produced, and the only way to propagate the plant will be by dividing the roots, or by cuttings and layers.

"An exchange, speaking of this subject, says:

"'The best raiser of the stockgilly that I ever knew, used to grow his plants in very small pots and poor soil, until the blossom buds began to form; he then planted them out in a bed of rich soil, and supplied them liberally with manure water, until the seeds were ripe, and from the seeds so produced, he had a large proportion of plants that had double flowers, and the plants of a fine dwarf habit, which would not be the case when the stimulus was applied during all the period of growth.'"

A MAN of words and not of deeds, is like a garden full of weeds.

Ladies' Department.

PRESERVING FRUITS.

Ens. Genesee Farmer:—I should like, through your columns, to give a few hints on preserving fruits. It may appear presumptuous in me to attempt to instruct your well-informed readers in any branch of the culinary department, but having heard of several persons in my immediate neighborhood who had either entirely or partially failed of success in bottling fruits, and having myself been fortunate enough to be successful, I will lay aside all scruples, and endeavor to explain the manner in which I proceeded last summer.

The first fruit which claimed my attention was strawberries. I bottled twenty-six quarts. After washing and hulling them, I measured them and put nearly a half a lb. of sugar to a quart of fruit; but I should think about three lbs. of sugar to eight quarts of the fruit would be sufficient, as keeping well does not depend upon the quantity of sugar used. I then placed sugar and fruit together upon the back of the fire until the juice was drawn a little. During this time, the bottles should be standing in moderately warm water, preparatory to being transferred to a hotter bath. Stir the fruit gently, just enough to keep the fruit from burning on the bottom, and when well heated all through, the sugar melted, and it commences to simmer a little, remove the kettle a little further back and prepare to bottle. Take the bottles or cans from the warm water and put them to stand in boiling (or nearly boiling) water while you fill them. After filling one bottle as full as will allow the cork to fit conveniently, immediately cork and seal it. Care should be taken to cover the cork and rim of the bottle entirely with the wax, so that there will be no space between the cork and the bottle. So as to be doubly sure, after cooling a little, I dip the mouth of the wax and roll it around while it cools. If the wax blisters at all, I dip it again, till it is firm and smooth.

I prepared my wax in the following manner. It is the best that I have seen, as it is not so brittle as that you buy, and, I think, cheaper: One lb. of common resin, one-fourth lb. beeswax (a smaller quantity will do), and the same of tallow. Put it in an old tin and stir it with a flat stick, which is used in sealing. It should be well boiled and mixed. In sealing the bottles, the wax need not be boiling, but heated enough to run easily.

I preserved some cherries for pies, without any sugar, and some sweetened to the taste. I think the latter is the better way.

Currants alone and currants mixed with raspberries are very nice bottled.

Green gooseberries keep perfectly well without sugar, when covered with water, and the bottles placed in a kettle of cold water upon the fire, brought to a boil, corked and sealed. A little straw should be placed upon the bottom of the kettle to protect the bottles from the fire.

When cold, if the fruit has been well bottled, there will be quite a space between the fruit and the mouth of the bottle, owing to the fruit being expanded while heated and contracted again when cooled.

I will send you for next month a receipt for bottling peaches. I would send it now, but I, for one, like to have a receipt come in just at the time when I want to use it. But perhaps next month will be too soon. However, I will see to it that you have it in *season* for the *season*.

Yours in good preservation, H. SIBRAH.

Remarks.—We thank our esteemed correspondent for her excellent letter, and trust she will give us her method of preserving peaches for the next number.

There is one point in preserving fruits without sugar which is very important. *The fruit should be thoroughly heated through.* It seems to be the general impression that the only use of heating is to expel the air from the cans or bottles; but, while this is essential, it is equally necessary that the fruit should all be brought to sufficient temperature to coagulate its albuminous matter.—Eds.

ORIGINAL DOMESTIC RECEIPTS.

French Soup.—Put a gallon of water in the pot, put four lbs. of the buttock of beef, or shin, or five lbs. of the thick part of the leg, three teaspoonfuls of salt, one of pepper, four onions, four leeks cut in pieces, two carrots, two good sized turnips, three cloves, one burnt onion, or three spoonsful of coloring; set it on the fire; when it begins to scum, skim if, and place the pot on one side of the fire. Add now and then a drop of cold water; it will make it clear. Boil four hours. Bread sliced and put into the tureen, and pour the broth with some vegetables over; serve the meat separate, and the remaining vegetables round.

Artichokes.—Cut in small pieces lean pork, put it in the frying pan and cover it with water; have ready some artichokes dressed and sliced thin. When the meat is nearly done, add the artichokes, keeping them covered with water. When tender, pour it into the tureen with the broth. Serve with crackers or bread crumbs, and it is a very palateable dish.

How to make a Parsnep Stew.—Slice salt pork, put it in the kettle, and fry it a little; cover with about a quart of water. When it boils, add to it a half a dozen potatoes and a parsnep cut in bits. Let them cook until done, and the stew is ready for the tureen.

Carrots.—Dress and slice thin some orange carrots, cover them with water, and let them cook until tender; then turn off what water remains, and pour over them some new milk; let it boil a moment, adding salt and butter to suit the taste.

HOW TO KEEP EGGS A YEAR.

It has been an interesting question, and one that has been argued and experimented on from the earliest history of the world to the present day, namely, the best, cheapest and safest mode of putting up eggs to keep good the greatest length of time. Nearly every farmer has experimented on it more or less, and the longest I have ever heard of eggs being kept was six months, I believe.

But I think I have struck a plan (or rather the hen struck it,) that will settle the question for all practical purposes. The discovery was in this wise:—Over a year ago, I had some hens laying in a hollow gum, filled or nearly full of unleached ashes; the gum was upset by accident, and I paid no further attention to it, until I needed some ashes this spring in making mortar. In taking the ashes off the ground at the end of the gum, I dug out four eggs that had been laid there one year ago; they were perfectly sound and good. We used one immediately after finding them, and kept the others four weeks and then used them, and found that they were as good as if they had not been laid a week. There is no doubt that these eggs were laid in the unleached ashes, previous to the gum being upset, over one year ago; the upsetting covered them with ashes, which were leached in course of time by the weather. Let some of your readers try this, and satisfy themselves that eggs can be kept fresh and good one year. I am trying the experiment with a larger lot, and will let you know how it succeeds at the proper time. A. C. PHELPS.

Hood River, Oregon, April 8, 1861.

Miscellaneous.

Flowers.—The body and the spirits are alike improved by the cultivation of the garden. It offers an enjoyment for which no one is too high or too low. More grows in the cotter's plot than flowers: the cultivation of pansies may tend to his heart's ease, the bed of thyme may speed a dull hour, and kind thoughts spring up while watering the clump of forget-me-nots. Everywhere the heart of man blesses flowers: the child seeks them in the hedges; the old man finds, in their culture and study, soothing recreation and delight: Pagan and Christian have used them in their rites; flowers deck the bride and are strewn on the grave. In every country they smile around us; to every grade they offer enjoyment; they give additional beauty to the new palace; they lovingly shroud the decaying ruin. Babylon had its hanging garden; Greece its roses and lilies—"*Lilia mista Rosis*;" and Rome, its box-trees cut into the figures of animals, ships, and letters; to say nothing of its violets and crocuses. Our first parents, indeed, came into the world in a garden; and Milton makes Eve say, as amongst her griefs:

"O Flowers,
My early visitation and my last
At even, which I bred up with tender hand
From the first opening bud, and gave you names,
Who now shall rear you to the sun, or rank
Your tribes, and water from the ambrosial fount?"

Roman Oats on English Farms.—In a field on the farm occupied by Mr. Binks, at Peppermoor, near Alnwick, some ancient encampments long existed which tradition ascribed to the Romans. The lapse of time and the spirit of agricultural improvement gradually obliterated almost every trace of them; and about a year ago the last of the whins, which time out of mind had covered the ground where the Roman legionaries had trodden, were cut down, and the land plowed and sown with barley. When the barley was ready for the sickle, Mr. Binks was astonished to observe several heads of strange-looking oats among it. Some of them were unusually tall and strong, with long branching stemlets, while others had globular heads resembling the seed of the onion. Mr. Binks collected no less than 75 varieties never seen in the district before. He has sown the seed, and intends to exhibit a collection of them at the next show of the Alnwick Horticultural Society. The place, as it has been conjectured, has been a cavalry camp, and the oats, which were perhaps ripened under other skies, after lying covered with the debris of the camps for probably 1,500 years, will again shoot into cereal beauty, and may add one or more permanent varieties to the stock of the English farmer.—*London Globe.*

Early Breakfast.—Breakfast should be eaten in the morning, before leaving the house for exercise or labor of any description. If early breakfast were taken in regions where chill and fever, and fever and ague prevail, and if in addition a brisk fire were kindled in the family room for the hours including sunset and sunrise, these troublesome maladies would diminish in any one year, not tenfold, but a thousand-fold, because the heat of the fire would rarify the miasmatic air instantly, and send it above the breathing point. But it is troublesome to be building fires night and morning all summer, and not one in a thousand who reads this will put the suggestion into practice, it being so "troublesome," requiring no effort to shiver by the hour, daily, for weeks and months together; such is the stupidity of the animal man!—*Hall's Journal of Health.*

A Convenient Memory.—"Mary, my love, do you remember the text this morning?" "No, papa, I never remember the text; I've such a bad memory." "Mary," said her mother, "did you notice Susan Brown?" "Oh, yes; what a fright! She had on her last year's bonnet done up, a pea-green silk, a black lace mantilla, brown gaiters, an imitation Honiton collar, a lava bracelet, her old ear-drops, and such a fan!"

Why there are more women than men is explained by De Quincey: "It is in conformity with the arrangements of nature; we always see more of heaven than of earth."

The Lark and Her Young Ones.—A lark, who had a brood of young ones in a field of corn which was almost ripe, was very much concerned lest the reapers should come before the little ones were able to fly; so, whenever she went abroad to seek food, she told the young larks to be sure and listen to all the news. One day, while she was absent, the master of the field and his son came to look at the crop. "This corn," said the father, "is quite ready for the sickle. To-morrow go and ask our neighbors and friends to come and help us reap it." When the old lark came home, the young ones, in a great fright, told her what they had heard, and begged her to remove them at once. The mother said, "There is no cause for fear; if he trust to his neighbors and friends for help, I am certain that the corn will not be reaped to-morrow." The next day the lark went abroad as usual, giving them the same directions as before. The farmer came to the field, and waited hour after hour for the expected help; but, finding the day passing away, and the corn getting more ripe, and no one coming to his assistance, he said, "We must not, I find, depend upon our neighbors; so to-morrow go and ask our relations—our cousins and uncles—to come and help us." In still greater fear, the young larks told their mother what they had heard. "There is no occasion to hurry away yet," coolly answered the lark, "for I know that their cousins and uncles have work enough of their own." The lark again went abroad, and the farmer coming to the field found his corn spoiling through over-ripeness. He waited for some time to see whether his relations appeared to help him; but, finding that they did not come any more than his neighbors, he said, "My son, let us lose no more time; to-morrow we will cut down the corn ourselves." When this was reported to the old lark, she said, "Now, my young ones, the sooner we get away the better; for when a man determines to do his own work, you may be sure that he is in earnest."

How to Clean a Gun.—No one should put away a gun without cleaning, not even if it has fired but one shot—that one barrel should be cleaned. First take the barrels off the stock, and immerse them in *cold* water about four inches deep. Then wrap some stout cloth (tow clings to the barrels, and leaves particles in them) about the cleaning rod, so thick that you will have to press rather hard to get it into the barrels; then pump up and down, changing the cloth till the water comes out clear; then pour hot water in them, stopping up the nipples, and turn them muzzles downward. Then put on dry cloth and work till you can feel the heat through the barrels, and the cloth comes out without a particle of moisture on it. Then put a few drops of clarified oil (made by putting rusty nails into some good salad oil) on the cloth and rub the insides; rub the outsides all over and then put the gun away.—*Porter's Spirit.*

Washington's Love of Horses.—The President's stables in Philadelphia were under the direction of German John, and the grooming of the white chargers will rather surprise the moderns. The night before the horses were expected to be ridden they were covered entirely over with a paste, of which whiting was the principal component part; then the animals were swathed in body-cloths, and left to sleep upon clean straw. In the morning the composition had become hard, was well rubbed in, and curried and brushed, which process gave to the coats a beautiful, glossy, and satin-like appearance. The hoofs were then blackened and polished, the mouths washed, teeth picked and cleaned, and, the leopard-skin housings being properly adjusted, the white chargers were led out for service. Such was the grooming of the ancient times. —*Recollections of Washington.*

Taking the Hint.—The Rev. Dr. Pullar had his garden often plundered. At length his suspicions fell upon a neighbor. One autumn day, when the fruit was approaching ripeness, he took occasion to call on the suspected party. After conversing with him on a variety of topics, Mr. Pullar remarked at parting, "By the bye, John, the pear tree at the north corner of the garden will be quite ready this week." Mr. Pullar's garden was unmolested afterward."

Take heed of an ox before, an ass behind, and a knave on all sides.

EDITOR'S TABLE.

Half Volume of the Genesee Farmer.

We will send the present half volume of the *Genesee Farmer* to any address for twenty-five cents. For one dollar, we will send *five copies*, together with a *Rural Annual and Horticultural Directory* for 1860 or 1861, or any previous year, to the person getting up the club.

Desirous also of disseminating choice fruit, we have made arrangements for a supply of *Delaware* grape vines, by which we are enabled to offer this valuable variety as a premium to all our friends who are willing to aid in increasing the circulation of the *Farmer*. The *Delaware* is now sold at from $1.50 to $3.00 per vine.

For $3.00, we will send 12 copies of the half volume of the *Genesee Farmer* (July to December inclusive), and one *Delaware* grape vine to the person getting up the club!

For $5.00, we will send 20 copies of the half volume of the *Farmer*, and *two Delaware* grape vines to the person getting up the club; and for larger clubs, grape vines in the same proportion.

This is a most extraordinary offer, and we feel confident that many of our friends will gladly avail themselves of it. They will have the satisfaction of introducing the *Farmer* to many who do not now take it, and of supplying themselves, without any expense, with the best grape yet introduced. *We guaranty its genuineness.*

The members of the club need not all be at one post-office. We will send the papers to as many different post-offices as is desired.

As we stereotype the *Farmer*, the back numbers of this year can be supplied, and, in competing for these premiums, a subscriber for a year at 50 cents will be deemed equivalent to two subscribers for the half volume at 25 cents each.

The grape vines will be sent this fall, in good season for planting.

Other varieties, such as the *Concord*, *Rebecca*, *Hartford Prolific*, or *Crivelen*, will be sent in place of the *Delaware*, if desired.

Our Notes of a Trip West have crowded out several advertisements, inquiries, &c. They shall appear next month.

The Markets.—Since our last month's report, grain of all kinds, both in this country and in England, has fallen considerably. The weather in Europe has been favorable for the growing crops, and with large importations from this country, the grain market, in the language of the *Irish Farmer's Gazette*, of June 9th, "continues hopelessly dull in every department." In New York, wheat has fallen during the month, about 10 cents per bushel, on all kinds except prime white.

Potatoes in this city are very dull of sale. We asked a farmer this morning (June 24), who has about 1000 bushels still on hand, what potatoes were worth, and he replied, "They are not worth any thing here." He is shipping them by canal to New York, at a cost of 62½ cents per barrel.

As compared with prices this time last year, prime white wheat is from 10 to 20 cents a bushel *higher* than it was twelve months ago, while prime red wheat is 5 cents *lower*, and inferior samples 25 cents lower. Corn in New York is 15 cents a bushel lower than at this time last year, and so is *rye*.

In regard to future prices it is not safe to hazard an opinion. In the April number of the *Farmer* we remarked.—"Some of our cotemporaries are of the opinion that if our present political troubles should unfortunately result in actual war, prices would advance. *This we deem an error.* The depression of the grain market during the last fall and winter was caused principally by a want of *confidence* among capitalists; and we can not see how it is to be restored except by a peaceful solution of our difficulties. So far as *material* prosperity is concerned, we have every thing to lose and nothing to gain by civil war."

Though contrary to the general opinion, we think these views will be found correct. The war in this country has a depressing effect on trade and manufactures not only here, but also in Europe, and so long as we have a superabundance of grain, we can not expect enhanced prices *because* of the distressed condition of the consumers. If war increases the price of produce, it will be owing to a falling off in its production. We think there will be little falling off in the coming harvest from this cause. We must not anticipate high prices, therefore, on account of the war. We do not expect prices, however, to go much lower than they are at present—and we shall not be surprised if they advance.

The wool market is very much depressed, and there are as yet but few sales of the new clip. We can not quote prices with any degree of safety.

Aaron Erickson, Esq., informs us that clips that were sold last year from 38 to 43 cents, have been bought this year for from 20 to 23 cents. Medium wools bring as much as the finer grades. There is no demand for fine wool. Coarser wool for army purposes is in demand. Our Canadian readers, who generally raise the coarse-wooled, mutton sheep, will obtain good prices this year for their wool.

Notes on the Weather, from May 15th to June 16th, 1861.—The average heat of the last half of May was 54.3°, and for the 24 last years was 57.8°; and the average heat of the month was 51.8°, and for 24 years was 56.3°. May was then a cool month, and seemed to be more April than itself. Though the season was about as forward as usual at the beginning of the month, it was greatly behind at the close of it. Vegetation began to move onwards towards the last of the month. Apples showed flowers on the 17th, but were fully out the 25th. Isabella grapes and Fox grapes leafed slowly near the end of May. Grass had come forward rapidly, and the prospect very good.

The rain, fallen in the month, was 3.88 inches, a large share. This has been the coldest May, except two, in 24 years. The range in the mean temperature of May is about 12 or 13 degrees: thus the mean in May 1850 was 49.1°, and in 1860 was 61.8°.

Pears and apples blossomed abundantly, as also the old red cherry; but the rare and fine cherries have shown few blossoms, and the peach next to none. The cold of February probably destroyed the buds.

On the 27th a heavy storm, at 2 to 2½ A. M., lightning, and wind, which soon became a gale, and by which the larger leaves were whipped into shreds so as to be much injured.

June began warm, and has so far been warmer than usual. The average heat of this half is 66.9°, and for 24 years is 63.2°, which gives 3.7° above the mean. The greatest heat, 87°, was at 2 P. M. the 11th, and the average of that day, 77°. The highest, on June 14th, 1860, was 92°; on June 15th, 1859, was 88°; and June 10th, 1858, was 86°. Still we have had sudden changes and high

wind. On the warm days, vegetation was very rapid, and soon needed the cooler weather to retard the progress and to make the growth stronger and firmer. The foliage has become thick and heavy and bright; the flowers abound on every side; grass and grain advance rapidly and give good promise of much harvest; and June in its midst is splendid.

Cultivated strawberries have just come into market from our gardens, and will in the third week of this month be abundant.

The wheat harvest is now (15th) being reaped in Southern Illinois.

WHAT ABOUT THE FAIRS?—The *Ohio Cultivator* says: "Up to the breaking out of this war, there was considerable activity among the various agricultural societies, in their preparations for the next autumn fairs. Since the call to arms, some societies seem to be in doubt whether to proceed with their arrangements, or postpone all action for a season. We hope this latter feeling will not prevail. If ever there is a time when the business of agriculture should be vigorously prosecuted, it is just now. The withdrawal of many of our young men from the field, thereby diminishing our number of producers, and to the same extent increasing the number of consumers, creates an imperative necessity that the remaining field force should be employed to the best advantage, and the cause of agriculture be kept as prominently before the people as possible.

The wastefulness of war can not but beget a demand for all sorts of food and material for subsistence of armies. Already the demand for substantial woolen goods for soldiers' wear, has created an activity in the wool market, especially for the middle grades, which will also affect all grades. Next to the general circulation of agricultural reading, there is no better agency to stimulate the cause of field production than the active operations of the agricultural societies, giving both tone and spirit to the labors of the field, and the business of stock growing.

By all means, keep the ball in motion, and do not give up the fairs. The arrangements may be of an economical sort, so that a partial failure, from any cause, would not embarrass the society or individuals; but keep on — do not harbor the idea that you cannot hold your field festivals to celebrate the triumphs of industry, and exchange the greetings of neighborly good fellowship."

THE first week in June we took a ride along the N. Y. Central R. R. to Buffalo. The country never was more beautiful, and the farmers are evidently exerting all their energies to raise good crops. A large breadth of land has been planted to corn, and though the season has been so unfavorable for the preparation of the ground, it is generally planted in fine condition. Let us hope that the season will be propitious, and the labors of the husbandman be crowned with success. The winter wheat has improved greatly within a few weeks, but the fields are very "spotted." One thing surprised and pleased us — the immense quantity of *peas* that have been sown. We have labored long and earnestly to induce farmers to sow more peas — believing, or rather *knowing*, that their growth and consumption on the farm would add greatly to its fertility. We think that it is safe to say there are five times as many peas sown this season as there were five years ago.

We saw one man laying underdraining tiles — and only one! Well, we will be thankful that there is one. Farmers are slow, but *sure*. They will ere long see the necessity and the profitableness of underdraining, and we shall soon see the good work proceed with commendable thoroughness and vigor. We never knew a man commence to underdrain, who ever abandoned it. It is the most *fascinating*, and the most profitable of all agricultural improvements. We observed that strips of board were laid under the tiles. We think, in the majority of cases, this is an unnecessary expense.

At Buffalo, we had the pleasure of going over R. L. HOWARD'S extensive works for the manufacture of the justly celebrated Ketchum Reaper and Mower. Mr. H. has lately introduded some very valuable improvements. Those of our readers who intend purchasing a machine this season, should send for one of Mr. HOWARD'S descriptive circulars.

JAMES G. DUDLEY, whose advertisement of cast steel bells, hay or cattle scales, etc., our readers may have observed in the *Farmer*, is an energetic business man, with whom our friends can deal with confidence.

Dr. O. F. PRESBREY, of the "Prospect Hill Vineyard" is doing his best to provide a good stock of the *Ontario* grape — a cut and description of which he furnished the *Genesee Farmer* in April last, page 121.

Notes of a Trip West.

WE have this day (June 19th) returned home from a trip west, having travelled over two thousand miles. A few hasty notes of the appearance of the crops will perhaps not be uninteresting, although the hasty glance one gets from a "lightning express" train, rushing through the country — and that generally the lowest and poorest parts of the country — at the rate of thirty or forty miles an hour, does not enable one to form a very definite or satisfactory opinion. There is one advantage, however, of this rapid view. You can compare one section with another, and draw conclusions which, however defective in detail, are nevertheless, on the whole, seen from the same stand-point, *comparatively* correct.

From Rochester to Niagara Falls the wheat is rather poor, though not so "spotted" as that on the road between here and Buffalo.

Crossing Suspension Bridge, we are soon flying past the quiet homes and well tilled farms of our Canadian neighbors. The general character of the land is the same as that of Western New York — the same crops and the same general management. One thing alone indicates that we are in a different country — *the plowing is English*; narrow furrows, straight as an arrow, laid up at an angle of 45°, with clean, well formed dead furrows for carrying off the surface water. As with us, the wheat has been injured, and will fall below the yield of last year.

In Michigan the wheat looks decidedly better, and will be a full average crop. Michigan is a fine State, and we think has made a decided advance in agriculture within the past few years. Grass, corn and spring grains look well.

Here we are in Illinois, rolling over her magnificent prairies,—and at this season of the year they *are* magnificent. Cattle by the hundred roam undisturbed and apparently uncared for, over the boundless expanse, quietly cropping the abundant herbage, and lying down to chew the end of contentment in a bed of fragrant flowers. We exclaim, "This is magnificent, grand, beautiful." Yet we must own to a certain degree of weariness, as we ride hour after hour over the unvarying scene. Here is a man breaking up the prairie, intending to sow wheat on it this fall. He has four yoke of oxen, attached to a plow which turns over a furrow twenty inches wide and about two and a half or three inches deep. The shallower the prairie is turned over the more readily does it rot. All that is done afterward is to harrow it lengthwise two or three times to keep down the weeds and mellow the surface. *Drill* in the wheat and let the drill run across the furrows, if it does not pull up the sod. If it does, drill lengthwise. But drilling across is decidedly the best if it can be done. A heavy crop of wheat is often obtained in this way.

It seems to us that one of our three-horse teams would find it light work to break prairie this depth in furrows ten or twelve inches wide. Here is an intelligent looking western farmer. Let us ask him his opinion.

"Is it necessary, sir, to use so much team in breaking the prairie?"

"No. One good yoke of oxen, if fed on hay with a little grain, or a heavy span of horses, with a twelve-inch Moline plow, will break from one and a half to two acres a day."

"Why, then, do they put on four yoke?"

"I presume that man is a new settler, and is hiring the work done at so much an acre—allowing the man to feed his team on the farm. The man has a couple of yoke of young cattle that he wishes to break, and so he puts them in the team with two yoke of old oxen. They will be worth $10 per yoke more when broke, and he has plenty of them and the feed while he is breaking them costs him nothing."

We are now in Southern Illinois,—in Egypt—approaching Centralia on the Illinois Central Railroad, on our way to Cairo. Friend EMERY, of the *Prairie Farmer*, who has favored us with his company, points out "the best fruit farm in the State." The orchard is sheltered on all sides except the south by a belt of timber trees. Peaches, pears, apples, everything, do well. As showing the rapidity with which everything comes forward in this rich soil and warm climate, he states that this spring he sent a friend some Wilson's Albany strawberry plants, and the day he left he received from him a basket of delicious fruit picked from the vines sent out from Chicago six weeks ago! Hurrah for Egypt!

Here we pass a peach orchard of some 75 to 100 acres. The trees are headed down quite low, and present a very healthy and beautiful appearance. This heading down low is an important point. The high winds which sweep over the prairies in winter are not so injurious to these low trees, and the branches shade the trunks from the sun. The latter is considered the more important.

The land in Southern Illinois is lighter colored and heavier than further north. It is better for winter wheat, fruit and "tame grasses." This year, the "army worm" has been exceedingly destructive, appearing in countless numbers and sweeping off wheat, grass, corn, and everything except clover, in its march.

"Except clover." It is a curious fact—if it be a fact, as we are assured it is—that it does not touch the clover, while it devours timothy. But alas! a field of clover is rarely seen in the Prairie State. In riding over 200 miles of railroad we saw but one field—and that was poor! There are few better indications of good, natural wheat soil than good crops of red clover, and if this is so, the Prairie State can not take a high rank as a wheat region. And yet we were gravely told, "Illinois, sir, can produce enough to support a population of twenty millions!"

That field of wheat is ready to cut. As our friend JOHN JOHNSTON once remarked, "you can see too far into it." Perhaps it is owing to the ravages of the army worm, but, at all events, it is a thin, light crop. There is a field harvested, and as we go further south we pass several fields that are cut and shocked ready to thrash. Occasionally we pass a good field of wheat, but generally the crop is light.

Cairo is decidedly a rough spot. A large hotel, a small church, and several Irish shanties, comprises pretty much all there is of the "city." As our readers know, it is situated at the confluence of the Ohio and Mississippi rivers, Illinois here running to a narrow point between these two mighty rivers, with Kentucky on the one side and Missouri on the other.

In a military point of view, it is undoubtedly the most important point in the Southwest. We are soon in the camp, and through the politeness of a friend obtain a pass, and are allowed to visit the fortifications. Preparations for defence are going on rapidly, and the general opinion is that if it is attacked, the assailants will meet with a warm reception.

Agriculturally, Cairo possesses no interest, and we retrace our steps to Jonesboro. This is a fine fruit section. The country was settled long before the days of railroads, and the thrifty old apple orchards remind us of Western New York. We saw many healthy old pear trees, loaded with fruit, which indicate that pears will do well in this section. There is a good crop of peaches. We are too late for strawberries; but here is a man who has got a basket of nice ripe mulberries, which he has gathered from trees in the woods.

Next day we proceeded to Sandoval, and called on CHARLES KENNICOTT, who has a farm and nursery on the prairies. He is enthusiastic in his admiration for Southern Illinois—evidently thinks it the garden of the world. Good soil, good climate, good neighbors, good prospects. We durst not remain long in his agreeable company, for fear of catching the western fever.

"What is land worth here?"

"About $20 per acre."

It is within a mile of Sandoval station, the junction of the Ohio and Mississippi and the Illinois Central Railroads. Mr. K. gets his St. Louis papers in the morning by the time the people of the city are up to read theirs.

From Sandoval we proceed northwards on the Illinois Central. There is little variation in the scene. Prairies

skirted with belts of timber, the white houses barely visible among the trees. Thousands and tens of thousands of acres of yet unbroken land, rich in all the elements of vegetable growth. Here a vast corn-field, that would make one's legs ache to go a bout in cultivating it. No wonder that two-horse cultivators, that take two rows at a time, are being introduced. Southern Illinois is the great winter wheat region, but one sees comparatively few fields of wheat from the railroad. Back in the country, we are informed, there is a large breadth sown, and the yield will be very large where the army worm has not destroyed it.

"When do you commence to break the prairie for wheat?"

"Commence the middle of May, and keep on till the first of July."

"What crop do you usually put in after the wheat?"

"Corn. Plow the wheat stubble in the spring, harrow if necessary, and then plant the corn. If not harrowed before planting, harrow after the corn is up. The harrows do not hurt the corn."

"What is your usual mode of cultivating corn?"

"As soon as it is up, run through it with a shovel plow, and then cultivate the other way. This is ordinarily all that is done. If cultivated in the rows after the shovel plow, it is all the better for it. Plant from the 15th of April till the 1st of June. It is ready to harvest from the middle of October to the middle of November."

"When you plant corn on new prairie land, plowed up for the first time this spring, how do you cultivate it?"

"*We do not cultivate it at all.* We break up the prairie quite shallow, and chop a hole through the sod and drop the seed in it, covering with loose soil. The roots of the corn run under the furrows, and feed on the decaying vegetation. Sometimes the corn is planted in the furrows, close to the land side, and covered with the next furrow. The plants come up between the furrows."

"The weeds and grass come up too, judging from that field we have just passed. The plants look yellow, and I should think you would get more grass than corn."

"At first the corn does not usually look as well as that planted on previously cultivated land, but later in the season, when the sod begins to rot, it improves rapidly."

"Will prairie grass fatten cattle as well as the cultivated grasses and clover?"

"From the first of spring till the middle of July, nothing is so good as prairie range. After this, the prairie grass gets coarse, and we are in the habit of burning over the prairie at different times, in order to keep up a constant supply of fresh grass."

"It does not appear to me as though the prairies would carry many head of stock. The fine grass seems thin."

"There you are mistaken. My neighbor, Mr. CUNNINGHAM of Salem, has a 500 acre range of prairie, and he keeps from 100 to 300 head of cattle on it through the season."

"Do men of moderate means, say $500, who settle on the lands of the Illinois Central Railroad Co., usually succeed?"

"Almost always. If they have any thrift, they can not help it. There are exceptions, but they are very rare. I know of one case, where three men from New Jersey, mechanics, came in here and took up 640 acres, and in a couple of years abandoned it and went back."

"What was the reason of their failure?"

"Well, several reasons. They put in spring wheat on the prairie, paying a high price for the seed, and the crop failed. They put in their crops before fencing the land—thinking they could fence after the crops were sown. But they had not time to do so, and the cattle got on the land and eat up the crops."

"Instead of spring wheat, what should they have sown?"

"They should have planted corn, and broke up more land for winter wheat."

"How long have you been in Illinois?'

"Fifteen years. I came here poor. Bought a farm for 70 cents an acre. Got a sow and pigs for $9; bred pigs as fast as I could, and in three years sold $1500 worth of pigs and had a good stock left. All you have to do is to raise corn enough to keep your pigs growing. If you have capital enough, nothing is so profitable as breeding mules."

This gentleman was a member of the Illinois State Legislature, and had got rich by farming in the southern part of the State.

Here we are at Vandalia. Let us inquire the price of produce.

"Corn 10 cents a bushel. Eggs, ready packed and barreled, 3¼ cents per dozen, and the barrels thrown in!"

We are now entering into a different section of country. The soil gets darker, and not so good for winter wheat, but great for corn and spring grains. At Pana, where we cross the Terre Haute, Alton and St. Louis R. R., the country round is truly magnificent; splendid rolling prairie, covered with flowers, and skirted in the far distance with belts of timber, with here and there some fine orchards of apple trees, and lo, a field of clover!

At Bloomington we called on our friend F. K. PHOENIX, and are indebted to him for many polite attentions. Mr. P. has a fine nursery of 140 acres, near the city. The severe winter of 1855–6 proved very destructive to fruit trees here, as elsewhere through the west, and it will take some years before fruit culture will recover its previous position. Fruit growers are beginning to realize the importance of a screen of evergreen and deciduous trees, to protect their orchards from the severe winds. We noticed around Bloomington a great many silver-leaved maples and red cedars, planted in belts for this purpose.

Mr. P. pointed out several trees of *Early Richmond* cherry, which were loaded with fine fruit, now nearly ripe. He thinks this the best and hardiest variety for the west.

"What do you consider the best varieties of strawberries for this section?"

"Wilson's Albany and McAvoy's Extra Red."

Messrs. OVERMAN & MANN have also a fine farm and nursery about four miles from Bloomington. They grow immense quantities of Osage orange plants for hedges. Their method is, to soak the seed in a pond of fresh water for a month to six weeks before sowing. In setting out the plants for a hedge, they deem it important to plant *deep* and thick, say 4 inches apart, in a single row. After planting, let the plants grow one year without clipping. Then in the following spring, as soon as the sap begins to flow, cut off the plants down to the yellow root even with the ground. Trim again the first of July, to within 10 inches of the ground.

When planted for screens, the plants are allowed to grow up without clipping.

Messrs. O. & M. have about half an acre of Wilson's Albany strawberries set out on newly broken prairie land, which, for productiveness, beats anything we have before seen in the strawberry line.

"What do you get for strawberries?"

"Fifteen cents a quart."

"What for corn?

"Eight cents a bushel!"

A gentleman standing by remarks, "I was offered today 7,000 bushels of corn, at *five cents* a bushel!"

We heard it remarked at the hotel, "You can get all the potatoes you want for the drawing." We were offered

them at five cents a bushel. The blockade on the Mississippi river at Cairo cuts off the Southern market, and produce is lower now than was ever before known.

There are some large farmers in this neighborhood. ISAAC FUNK came here from Ohio when the country was new. He brought with him all his worldly goods, consisting of a horse, one yoke of oxen and a fur hat. He commenced working some land, and traded his fur hat in the village for a sow in pig, and drove her home bare-headed. He bred all the pigs he could, and raised corn to feed them. He has now *twenty-seven thousand acres of land*, all paid for, estimated to be worth over $800,000. His stock of horses, mules, hogs and fat cattle are worth another $100,000, and he owns a good deal of railroad stock besides. He has acquired this immense wealth by farming. He has never speculated in anything, except in buying cattle. He has eight sons,—great stock men—all of whom assist him in his farming operations. He has one pasture field of 8,000 acres, enclosed with a plank fence; another of 3,900 acres, and another of 1,000 acres. His principal crop is corn—raising only enough wheat for his own use. He usually consumes all the corn on the farm. His average sales of cattle in New York are said to amount to $70,000 per annum.

The price of land in this neighborhood ranges from $20 to $40 per acre.

But we must hasten. Eighteen hours ride, and we are on the banks of the Upper Mississippi, at Prairie du Chien in Wisconsin. The soil of this prairie is composed of very coarse sand. At Bloomington, we were told that nothing was so good for their land as sand—that it ameliorated their fine, compact prairie soil, and made it work easy and greatly increased its productiveness. Here there is certainly no deficiency of sand. We were told, "It is good for garden vegetables *in a wet season!*" That tells the whole story: the man who likes a wet season has either a poor soil or is a bad farmer.

Last year's crop of wheat in Wisconsin—nearly all spring wheat—was immense. The country is yet full of it. From Prairie du Chien, from 60 to 100 car loads, each car holding 350 bushels, have been sent daily for several weeks to Milwaukee, and along the route we found the warehouses full of wheat. Milwaukee is now the great grain market for the West. Here is a Dutch farmer from Bad Axe county, his rotund face several inches longer than usual. He has been speculating in wheat, and his remark, "I vish I never had," evidently comes from his heart. It has fallen on his hands over 20 cents a bushel.

"Do you raise much wheat?"

"Vell, I raised last year about 1200 acres."

"How large a farm have you?"

"Voods and all, about 1500 acres."

Twelve hundred acres of wheat on a fifteen hundred acre farm! Talk of *rotation of crops!* He has 1200 acres in wheat again this year, and it looks well. "But at fifty cents a bushel it won't pay, an' you raise thirty bushels per acre."

With "stump-tail" currency and an extremely depressed market, the farmers at the West are having a rough time of it; but they are generally in buoyant spirits and hope to weather the storm. The past four years experience will teach a useful lesson. The rush for the cities is checked, and the speculations in village lots have come to an untimely end. Much as farmers suffer, they are far better off than the merchants. They have plenty to eat, and the land remains from which they can still dig wealth.

Notes from Canada West.

EDS. GENESEE FARMER: I have lately visited some of the most celebrated wheat-growing localities in Canada West—where the winter wheat rarely falls below an average crop, and they usually sow one-fourth of their land to fall wheat—but now not more than one field in ten is fall wheat; and in a drive of sixty miles I saw but one acre—and that was in an orchard—that will produce an average crop. The prospect for spring wheat is much better, except in wet soils where it could not be sown till the last of May. The burning suns of the latter half of June will probably bake such soils, and prevent the possibility of a heavy crop.

All spring crops are in a backward state. Some are still sowing oats and planting potatoes; but they are few. The majority have all their root crops finished, except turnips. A very large breadth of land will be sown with the Swedish turnip this year. We are all convinced that this branch of farming is the basis of success in Canadian agriculture. The farmer who raises the most roots can keep the most cattle and sheep, make the most and best manure, and also raise the most grain and grass on the same quantity of land.

The hay crop will be late, and much below an average of past years, especially in clover lands, as that plant suffered nearly as much as winter wheat during the frosts of March.

The small fruits generally will be abundant, except the cherry. Dwarf pears bore too heavy last year, to do much this year. The blossom in the apple orchards was greater than could have been expected, but I noticed that it was confined to natural fruit and hardy varieties in grafts.

Wool finds a ready market, at prices ranging from 24c. to 30c. per pound.

Could you not induce some of your correspondents, scattered throughout the States, to give us an idea of the prospects for the coming harvest? We gather bits and scraps, now and then, in our various papers; but it is too frequently written by those who can not distinguish a field of wheat from one of barley, and often judges the quality as well as quantity *from a distance.* We want to hear from those who go into it, and pass through it, and come out of it.

R. W. S.

Woodstock, C. W., June 14, 1861.

Special Notices.

IMPORTANT TO FARMERS.—To those who wish to purchase a *perfect "Combined Reaper and Mower,"* we would say that "Ball's Ohio Mower and Reaper" is manufactured at Auburn Prison, by Messrs. ROSS, DODGE & POMROY, sole proprietors for the State of New York for the use of those valuable patents. The machine is made of the best material, and warranted to be a perfect Mower or Reaper, and to cut easily, without clogging, any kind of grain or grass, either wet or dry.

The Mower has a cast steel Cutter-bar, 4 feet and 6 inches cut with polished wrought iron guards, plated in the slot with cast steel and tempered.

The Reaping attachment has a Finger-bar and polished wrought iron guards attached to it, with a sickle-edged knife, which, for cutting grain, is far better than the smooth-edge mowing knives generally used. By means of the separate Finger-bar and Sickle, they are enabled to make the Reaper cut either five or six feet swath, and dispense with the heavy mowing-bar when reaping.

The Combined Reaper and Mower is delivered to the purchaser for the sum of $150 for a six months note without interest, or for $145 cash. The agents for Monroe Co., N. Y., are J. W. HANNAH, of Clifton, and DANIEL KINGSLEY, of Pittsford. myst

ADVERTISEMENTS.

A FEW short advertisements of interest to farmers—and only such—will be inserted in the *Genesee Farmer* for twenty-five cents a line, or $2.50 per square, each insertion, payable in advance. To secure insertion, they should be sent in by the 15th of the previous month.

We will also insert a few "Special Notices," if appropriate to our columns, at fifty cents a line.

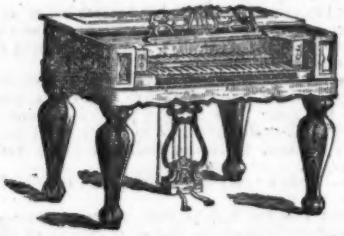
TO PRESERVE STRAWBERRIES, RASPBERRIES, and all fruits, send 15 cents in P. O. stamps, and get "Culver's Fruit Preserver's Manual" by return mail, post-paid. Address E. DARROW & BRO., Rochester, N. Y.

I WANT 100 SMART MEN—(Unemployed) to sell WAR BOOKS. Sure to sell fast, and large profits given. Address GEORGE EDWARD SEARS, 188 William Street, New York.

ITALIAN BEES.

GREAT REDUCTION IN PRICE.—We are now furnishing Italian Queens, GUARANTEED PURE, for $5 each. They will be forwarded in any way directed by the purchaser. All orders must be accompanied by the cash, and will be filled strictly in the order received. BAKER & TAYLOR, Holmesville, Bucks County, Pa.

PRINCE & CO.'S
IMPROVED PATENT
MELODEONS.
Warranted for Five Years.



THE Oldest Establishment in the United States, employing 200 men, and finishing 80 instruments per week.

WHOLESALE DEPOTS.

87 Fulton street, N. Y., and 82 Lake street, Chicago. Manufactory, corner Niagara and Maryland streets, Buffalo.

WHOLESALE AGENTS.

Russell & Tolman, Boston, Mass.; W. F. Colburn, Cincinnati, Ohio; Balmer & Weber, St. Louis, Mo.; Ph. H. Werlein, New Orleans; A. & S. Nordheimer, Toronto, C. W.

LIST OF PRICES.

PRICES OF PORTABLE INSTRUMENTS.—Four Octave, C to C, $45. Four and a half Octave, C to F, $60. Five Octave, F to F, $75. Five Octave, Double Reed, F to F, $130.

PRICES OF PIANO CASED.—Five Octave, F to F, $100. Six Octave, F to F, $130. Five Octave, Double Reed, F to F, $150. Five Octave, Two Banks of Keys, $200.

ORGAN MELODEON.—Two Banks of Keys, Five Sets of Reeds, Eight Stops, One and a Half Octave Foot Pedals, One Set of Reeds in Pedal Bass Independent, $350.

ORGAN MELODEON.—One Bank of Keys, Three Sets of Reeds, Six Stops, One and a Half Octave Foot Pedals, $250. One Set of Reeds in Pedal Bass Independent, $25 extra.

OUR LATEST IMPROVEMENT—PRINCE & CO.'S GRADUATED SWELL.

This is an entirely new idea, and its want has been noticed by all acquainted with Reed Instruments. The old swell could never be made to operate gradually; the instant the pedal was touched for opening it, the change would be instantaneous and abrupt.

Our NEW SWELL is constructed on scientific principles, and we are satisfied, by our untiring study and experiments, that it is the only one by which the tone of Reed Instruments may be graduated from a mere whisper to the full power of the instrument, and *vice versa*. The volume of tone is also very much increased by this swell, and is now all that we could desire.

We have taken the necessary steps to secure a patent for our improvement, and shall not sell rights to other manufacturers.

This, in connection with our DIVIDED SWELL (which we patented in 1856), will be added to all the Melodeons which we manufacture in the future, and without extra charge. One other feature in our Melodeons is the IMPROVED VALVE OR PALLET, being a combination of cloth and leather, prepared expressly for the purpose. This valve we have used for the past three years, and we find it to be the very thing that has been so long needed as a substitute for the India Rubber Valve, which has been in general use since Melodeons have been manufactured, *and which has caused so much trouble by the dissolving and sticking of the India Rubber.* All of our instruments are now finished with this improved valve, and we can recommend them with confidence.

Persons unacquainted with the Melodeon and its history, will bear in mind that we are the pioneers and leading manufacturers, not only in the United States, but in the world. We commenced the manufacture of Melodeons in the fall of the year 1847, and since that time have finished and sold TWENTY-SEVEN THOUSAND. These instruments are now in use mostly in the United States and Canada, but also in Europe, Asia, Africa, South America and the West Indies, and from all these quarters we have the most flattering testimonials of the high estimation in which they are held. AT ALL INDUSTRIAL EXHIBITIONS THEY HAVE INVARIABLY BEEN AWARDED THE HIGHEST PREMIUM WHENEVER EXHIBITED IN COMPETITION WITH OTHERS.

We shall take pleasure in forwarding by mail (at our own expense) our Illustrated Catalogue, in which every instrument we manufacture is fully described, and illustrated by elegant engravings.

All Melodeons of our manufacture, either sold by us or dealers in any part of the United States or Canada, are warranted to be perfect in every respect, and should any repairs be necessary before the expiration of five years from date of sale, we hold ourselves ready and willing to make the same free of charge, provided the injury is not caused by accident or design.

Agents for the sale of our Melodeons may be found in all the principal towns of the United States and Canada.

Address either
GEO. A. PRINCE & CO., Buffalo, N. Y.
GEO. A. PRINCE & CO., 87 Fulton street, New York.
GEO. A. PRINCE & CO., 82 Lake street, Chicago, Ill.
Or either of the above wholesale agents.

The Great Illustrated Newspaper of America.

IN ADVANCE OF ALL COMPETITION.

FRANK LESLIE'S
ILLUSTRATED NEWSPAPER

CONTAINS the only correct and authentic illustrations of the

SCENES, EVENTS AND INCIDENTS

OF THE

GREAT WAR.

Frank Leslie has SIX SPECIAL ARTISTS with the Army in various sections of the country, and has over THIRTY VOLUNTEER ARTISTS among the Officers now at the Seat of War, from all of whom he receives

Spirited and Life-like Sketches,

together with maps, plans and positions, forming the most complete history of the campaign in every department.

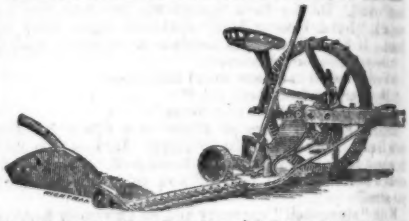
Portraits of distinguished Military, Naval and Civil Officers, Views of Places in the circle of the War Excitement, together with every incident and occurrence connected with events now transpiring in all parts of the Union, will be found in

Frank Leslie's Illustrated Newspaper.

The literature of the paper, always of the first class, is full of interest at this time, and will be found admirably adapted to family reading.

Every one should take home to his family a copy of *Frank Leslie's Illustrated Newspaper.* Terms, Three Dollars per year in advance. July FRANK LESLIE,
19 City Hall Square, New York.

HOWARD'S NEW MOWER.
PRICE REDUCED FOR 1861.



The Cheapest, Most Durable and Lightest Draft Mower

OFFERED for sale. Three sizes, $70, $85, and $100 each. All are warranted—can give the testimonials of those who have used them, if desired. Send for circular giving full description.

KETHUM'S COMBINED MACHINE IMPROVED.
PRICE AS USUAL, $130.

Improvements of guards, shoe with roller, lever with rake, and extras for the Ketchum machine furnished at moderate prices by giving the number of the machine for which they are wanted. Address R. L. HOWARD, Buffalo, N. Y.

FANCY FOWLS.—I have on hand, for sale, White Dorking, Black Spanish, Black and Golden Spangled Polands and Hamburghs, Black African, White, Red and Golden Spangled Bantams, Madagascar Rabbits and four varieties of Geese, &c. For further information address, W. A. GOODING,
March—10t.* Lockport, Illinois.

GEORGE MILLER—Importer and Breeder of Short-horn and Galloway Cattle, Leicester and Cotswold Sheep, Markham P. O., Co. York, Canada West. N. B. A few choice Dorking Fowls, bred from imported stock, can be had in autumn. Price $5 per pair. July—tf

6,000 AGENTS WANTED—To sell SIX NEW INVENTIONS—two very recent, and of great value to families; all pay great profits to Agents. Send four stamps and get 8 pages particulars. My3t* EPHRAIM BROWN, Lowell, Mass.

PRIZE MEDAL OHIO REAPER AND MOWER.

E. BALL'S PATENT.

MANUFACTURED BY

ROSS, DODGE & POMROY,

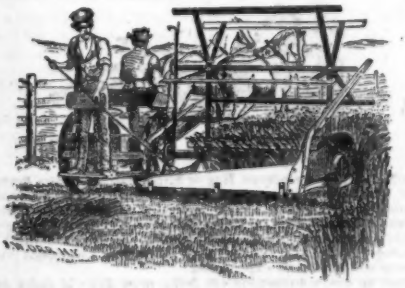
AUBURN, N. Y.

1. The carriage of the machine is mounted on two driving wheels. In connection with each of these is a spur wheel and pinion, making the machine stronger and more durable than any single-geared machine can be.

2. The relation between these two driving wheels is such that they operate jointly or separately, as circumstances may require. The result of this is, that when the machine is moving on a curve, either to the right or left, the usual speed of the knife is retained and clogging avoided, and in turning and backing the machine throws itself out of gear.

3 The weight of the carriage and gearing attached to it, as well as that of both raker and driver, is thrown directly upon the two driving wheels, by which the following advantages are gained: 1st. The wheels are prevented from slipping on the ground, and thus prevent the machine clogging. 2d. A powerful and efficient stroke to the knife is produced, enabling the machine to cut any kind of grass or grain without difficulty. 3d. No weight being thrown on either the platform or cutter bar but that of its own, side draft is obviated, and the machine made to run lighter.

4. The machine, both as a Reaper and Mower, has a flexible cutter-bar, which invariably adapts itself to the uneven surface of the ground. This is the first successful machine that ever combined this principle, and it is now an almost universally admitted fact among intelligent farmers and mechanics that it is impossible to construct a good Mowing machine without having a flexible cutter-bar and two driving wheels.



The advantages of this machine as a Reaper are very obvious:
1 The grain is delivered at the side of the platform, entirely out of the way of the next round.

2. It cuts a swath six feet wide, and will cut one acre per hour with one span of horses without injuring them.

3. It can be changed from a Mower to a Reaper in fifteen minutes, and vice versa.

There are other general points of excellence, the simple mention of which will be at once understood by the practical farmer.

1. The mechanical execution of the work, as well as the character of the materials used in their construction, is superior to that of most machines of the kind.

2. The driving wheels are three feet high, thus improving the draft.

3. It has an adjustable tongue by which the side draft can positively be controlled under all circumstances. Some machines have little or no side draft while mowing, but have a great deal while reaping. Nothing but an adjustable tongue can avoid this difficulty.

4 The height of the stubble can be changed from one to five inches in an instant, without stopping the machine. This is an important improvement from the fact that it enables the machine to cut lodged grass as close to the ground as that which is standing; or to cut a high stubble where the ground is rough, boggy, or stony; or the points of the guards can be turned above the grass whilst the machine may be passing over it after it is cut.

5. In case the "Lifting Principle" should be preferred to the one just described, the cutter-bar can be confined to cut at any given height, and then by the use of the lever, the driver, whilst on his seat, can raise the cutter-bar parallel with the ground from three to twelve inches. This arrangement facilitates turning and backing, or passing over large stones or stumps.

6. In moving the machine over cut grass, or from place to place, the cutter-bar can, in an instant, be raised, folded up and supported against the side of the machine.

7. The journals run in iron boxes babbeted, excepting the pitman box, which is composition.

8. The guards are polished wrought-iron, plated with cast steel. The Mower cuts four feet six inches wide.

MANUFACTURED AT THE AUBURN STATE PRISON.

April—4t. **ROSS, DODGE & POMROY.**

WM. PATERSON'S
Improved Superphosphate of Lime.

MANUFACTURED and for sale at Division Street Wharf, Newark, N. J., and by the Manufacturer's Agents in this and other States.

It is put up in bags of 100 and 150 lbs. each, and marked with the Maker's name, to whom orders sent with cash, or satisfactory references here or in New York, will be promptly executed.

The aforesaid article consists principally of Charred Bones, dissolved by Sulphuric Acid with a large proportion of Peruvian Guano and other important ingredients.

The largely increased sales for the last seven years, with the unsolicited reports of Agents, and premiums awarded by State and other Agricultural exhibitions in past years, attest satisfactorily its remunerative results, being found more permanent in its effects than Peruvian Guano, and consequently more profitable.

It has been the aim of the manufacturer to make this manure what it is avowed to be, and the public may rest assured that it will continue to be uniform in quality and profitable to the buyer.

Circulars, with particular instructions for use, will be sent by mail when requested or on application to his agents.

March—7t. WM PATERSON,

THE KEDZIE FILTER.

This Filter possesses a very *practical* and *scientific* arrangement for the objects intended, viz: rendering the most impure rain and river water free from all decomposed organic matters and gases, color, taste or smell. *Pure Water* is the chief conservator of the human system, and can be surely obtained by using this, the best portable Filter known. They are durable, convenient and cheap; can be transported in safety any distance, and are sure to give satisfaction.

Manufactured by

JAMES TERRY & CO., Rochester, N. Y.

☞ Descriptive Catalogues sent free. May—3t.

WOOD CUTS FOR SALE.

WE will sell Stereotypes of the Wood Cuts used in the *Genesee Farmer* and *Rural Annual and Horticultural Directory*. A book containing impressions of over Seven Hundred of these cuts will be sent to those wishing to purchase on the receipt of 50 cents. The book contains an index, showing where descriptions of the cuts will be found.

Address **JOSEPH HARRIS**, Rochester, N. Y.

"FAMILY NEWSPAPER."

MRS. HANKINS' Mammoth Pictorial is in its Sixth Volume, and has 300,000 readers. Full of Engravings and Fashion Plates. Largest, nicest and best in the World, for **75 cents** a year. AGENTS Wanted. Ladies, Teachers, Clergymen or Post Masters. Specimen copies and Terms to Agents mailed gratis.

March.—6t. Address HANKINS & CO., New York.

"Women of New York."

MRS. HANKINS' Curious new Book of Female Characters in the City, is very interesting and strictly moral. Fancy binding. 350 pages. 50 Engravings. 36 Portraits. Mailed free for **$1.** AGENTS Wanted—Ladies and Teachers. Description of Books and Particulars of Agency mailed gratis. Address

March.—6t. HANKINS & CO., New York

$5 MAP FOR 25 CENTS!

COLORED IN STATES, NICELY,

OR, 15 CTS. PLAIN.

Took 3 Years to Engrave this Map.

LLOYD'S UNITED STATES R. R. MAP OF AMERICA IS NOW READY.

HAVING been engraved on a new plan entirely, and printed and colored on a POWER PRESS we can make and color it so low as to defy competition. The usual price of a Map of this size is from $5 to $8.

IT IS FOUR FEET SQUARE,

Printed on an entire sheet of strong white linen paper, and shows to the reader, at one glance, from CANADA to TEXAS, and is *acknowledged by all R. R. men to be the most CORRECT* Map ever offered to the people of this Country, and is used by them altogether. To show how correct this Map is, we will just say that, on the 26th of March, the Cincinnati and Chicago Air Line R. R. was opened from Cincinnati to Chicago, and it is laid down correctly on our Map.

Lloyd's R. R. Map shows every Railroad in running order, up to Feb. 1st, 1861. Every station is marked down on the roads, and the distances between each station, and the total length of the road, and also the names of its officers and their places of residence, and the running time of the trains on every R. R. in America are given. Every River in America is traced out and the Towns and Cities on the Ohio and Mississippi and other Rivers are marked down plainly. ALL THE STRONGHOLDS IN THIS COUNTRY ARE LAID DOWN PROMINENTLY; the Reader can see at a glance the situation of the *NORTHERN and SOUTHERN STATES, and can comprehend at a glance the immense extent of territory owned by the South, which is washed by the sea for more than two thousand miles.*

In addition to the main Map, there is a Map of the EASTERN STATES inserted in the blank space at the foot of the large Map, South, which is on a scale THREE TIMES AS LARGE as the main Map, showing every R. R. Station, City, River, Mountain and Lake, East of New York city in the NEW ENGLAND STATES, which *is alone worth three times the price of the Map.*

30,000 Cities, Towns and Stations are laid down

on Lloyd's Map.

A TIME INDICATOR is also inserted on the face of Lloyd's Great United States R. R. Map, SHOWING THE DIFFERENCE IN TIME AT WASHINGTON, D. C., AND THE PRINCIPAL CITIES IN THIS COUNTRY AND EUROPE. Thus, when it is 12 o'clock, M., at Washington, it is *half-past TWO O'CLOCK the following night at Jeddo, Japan*—being 14 hours ahead of our time at Jeddo.

Lloyd's Map can be folded up and put away without creasing, or hung up on the wall.

AGENTS WILL FIND THAT THEY CAN SELL from 20 to 40 copies of the Colored Edition daily. It can be sent by mail in strong wrapper, by the quantity, at *one-half cent per copy.*

COUNTY RIGHTS GIVEN.

This excellent map is now ready for the people, and can be mailed anywhere in the United States for one cent postage. The plain edition is only FIFTEEN CENTS PER COPY, *the colored edition is 25 cents a copy,* and we warrant the Map to be all that it is represented to be. Agents are supplied at greatly reduced rates. *Agents can sell the colored edition fastest.*

☞ SEND MONEY FOR SAMPLE Copy and Private Circular, giving Terms and County Rights. Agents can sell this Map to *everybody they call on,* as it is the cheapest and best Map in the United States, and shows at a glance from the Atlantic Ocean to the Gulf of Mexico.

☞ POSTMASTERS can sell this Map to everybody in their district. Big profits allowed them! Send for a Sample!

☞ NO STAMPS TAKEN. *No Samples can be sent without the money, as our profit is very small.*

☞ No LICENSE IS REQUIRED TO SELL THIS MAP IN ANY STATE IN AMERICA.

AS there is so much deception practiced upon the public now-a-days, we have thought it advisable to submit evidence of the correctness of this Circular:

NEWARK, New Jersey, 1861.

J. T. LLOYD:—Enclosed is $3.00; I consider your Railroad Map alone worth that amount. JOHN S. DARCY,
President New Jersey R. R. Co.

UNITED STATES LAND OFFICE, Pensacola, Florida.

J. T. LLOYD:—Send me two copies of your valuable Railroad Map every week. H. WELLS, Land Commissioner.

LOGANSPORT, PEORIA, AND BURLINGTON R. R. Co., 1861.

J. T. LLOYD:—Send me twenty-five copies of your valuable Railroad Map for use of our station.
CHARLES FOLLETT, General Ticket Agent.

OFFICE MICHIGAN CENTRAL R. R. Co.,
DETROIT, August 24, 1860.

Mr. DARIUS CLARK, Agent Michigan Central Railroad Co., No. 173 Broadway, New York.—Dear Sir: We believe from the plan of Lloyd's Railroad Map, and its cheapness, that it will supercede all competitors. Mr. R. N. Rice, our Superintendent, is quite pleased with Lloyd's Railroad Map, and hereby directs you to pay $30.00 for ten copies, to be sent yearly to the address of the following persons connected with our road.
Respectfully, THOMAS FRASER,
General Ticket Agent Mich. Cen. R. R. Co.

LLOYD'S AMERICAN RAILROAD MAP, is one of the most useful weekly publications in this country. It is a paper of mammoth dimensions, containing on one entire side a map of all the railroads in the United States, together with a dial showing the corresponding time with Washington city, D. C., at 12 o'clock, noon, of all the principal points in the United States and the World. On the other page is contained under its number every Railroad Time Table in the United States, their officers, fares, distances, etc., etc., etc. It is the best thing of the kind we have ever seen, and should be in the hands of every hotel-keeper, railroad man, and traveler in the country. It is published at 164 Broadway, New York.—*Marietta* (Ga.) *Advocate.*

LLOYD'S RAILROAD MAP is said to be the most comprehensive and accurate Map published.—*Norwich* (Ct.) *Aurora.*

LLOYD'S RAILROAD MAP is the most accurate railroad map and guide extant.—*Norwich* (Ct.) *Courier.*

WASHINGTON CITY, February 6th, 1861.

J. T. LLOYD.—Dear Sir: Enclosed find $1.00, the worth of which please forward in your R. R. Maps. I wish to use them before the Legislatures of the Southern States.
Respectfully, GEN. DUFF GREEN.

GENERAL SUPT.'S OFFICE, VIRGINIA & TENN. R. R. Co.,
LYNCHBURG, Va., February 1st, 1861.

DEAR SIR:—I think highly of your "American Map," and enclose you twenty dollars in order to aid in keeping it up.
E. H. GILL, Gen. Supt.

J. T. LLOYD, 164 Broadway, New York.

OFFICE OF THE GENESEE FARMER,
ROCHESTER, N. Y., April 9th, 1861.

J. T. LLOYD:—I think your Map a most valuable one. I should think it would have a great sale. JOSEPH HARRIS,
Proprietor of *Genesee Farmer.*

☞ I REFER TO ANY R. R. MAN in the United States for the correctness of Lloyd's R. R. Map. Address

May—3t **J. T. LLOYD, Publisher,**
No. 164 BROADWAY, NEW YORK CITY, N. Y.

Important to every Man who Keeps

THORLLY'S FOOD FOR CATTLE.

CONVERTS the poorest Hay or Straw into a Superior Provender. For Horses it is indispensable in promoting and sustaining the animal functions in health and vigor. For Milch Cows, it is invaluable, increasing the quantity and improving the quality of the milk. For Beasts, nothing can compare with it for feeding quickly. For Sheep and Pigs, the effects produced in one month will exceed all expectation.

Sold in casks, containing 448 feeds, price $14; ½ casks, containing 224 feeds, $7: and ¼ casks, containing 112 feeds, $4.

Depot for the United States, No. 21 Broadway, New York.

A Pamphlet, descriptive of its utility, containing Testimonials and Directions for Use, sent free on application.

N. B.—Agents required in every principal town in the United States. March, 1861.—6.

COUNTRY AGENTS WANTED.

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A valuable labor-saving improvement.
J. RAPALJEE, Genesee Seed Store.

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The best machine for the purpose within our knowledge, and therefore commend it to the attention of all interested. It must prove a decided acquisition in the haying season, when both time and labor are money. D. D. T. MOORE.

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THE SOUTHERN PART

of the State lies within the zone of the cotton regions, while the soil is admirably adapted to the growth of tobacco and hemp; and the wheat is worth from fifteen to twenty cents more per bushel than that raised further north.

RICH ROLLING PRAIRIE LANDS.

The deep rich loam of the prairies is cultivated with such wonderful facility that the farmers of the Eastern and Middle States are moving to Illinois in great numbers. The area of Illinois is about equal to that of England, and the soil is so rich that it will support twenty millions of people.

EASTERN AND SOUTHERN MARKETS.

These lands are contiguous to a railroad 700 miles in length, which connects with other roads and navigable lakes and rivers, thus affording an unbroken communication with the Eastern and Southern markets.

APPLICATION OF CAPITAL.

Thus far, capital and labor have been applied to developing the soil; the great resources of the State in coal and iron are almost untouched. The invariable rule that the mechanical arts flourish best where food and fuel are cheapest, will follow at an early day in Illinois, and in the course of the next ten years the natural laws and necessities of the case warrant the belief that at least five hundred thousand people will be engaged in the State of Illinois in various manufacturing pursuits.

RAILROAD SYSTEM OF ILLINOIS.

Over $100,000,000 of private capital have been expended on the railways of Illinois. Inasmuch as part of the income from several these works, with a valuable public fund in lands, go to diminish the State expenses, the TAXES ARE LIGHT, and must consequently every day decrease.

THE STATE DEBT.

The State Debt is only $10,105,398, 14, and within the last three years has been reduced $2,959,746 80, and we may reasonably expect that in ten years it will become extinct.

Pamphlets descriptive of the lands, soil, climate, productions, prices and terms of payment, can be had on application to

PRESENT POPULATION.

The State is rapidly filling up with population; 868,025 persons having been added since 1850, making the present population 1,723,663, a ratio of 102 per cent. in ten years.

AGRICULTURAL PRODUCTS.

The Agricultural products of Illinois are greater than those of any other State. The products sent out during the past year exceeded 1,500,000 tons. The wheat crop of 1860 approaches 35,000,000 bushels, while the corn crop yields not less than 140,000,000 bushels.

FERTILITY OF THE SOIL.

Nowhere can the industrious farmer secure such immediate results for his labor as upon these prairie soils, they being composed of a deep rich loam, the fertility of which, is unsurpassed by any on the globe.

TO ACTUAL CULTIVATORS.

Since 1854, the company have sold 1 300,000 acres. They sell only to actual cultivators, and every contract contains an agreement to cultivate. The road has been constructed thro' these lands at an expense of $30,000,000. In 1850 the population of the forty-nine counties through which it passes was only 335,598; since which 479,293 have been added, making the whole population 814,891, a gain of 143 per cent.

EVIDENCES OF PROSPERITY.

As an evidence of the thrift of the people, it may be stated that 600,000 tons of freight, inclucing 8,000,000 bushels of grain, and 250,000 barrels of flour, were forwarded over the line last year

EDUCATION.

Mechanics and workingmen will find the free school system encouraged by the State, and endowed with a large revenue for the support of schools. Their children can live in sight of the church and schoolhouse and grow with the prosperity of the leading State in the Great Western Empire.

PRICES AND TERMS OF PAYMENT.

The prices of these lands vary from $6 to $25 per acre according to location, quality, &c. First-class farming lands sell for about $10 or $12 per acre; and the relative expense of subduing prairie land as compared with wood lands is in the ratio of 1 to 10 in favor of the former. The terms of sale for the bulk of these lands will be

One Year's Interest in advance,

at six per ct. per annum, and six interest notes at six per ct. payable respectively in one, two, three, four, five and six years from date of sale; and four notes for principal, payable in four, five, six and seven years from date of sale; the contract stipulating that one-feuth of the tract purchased shall be fenced and cultivated, each and every year, for five years from date of sale, so that at the end of five years, one-half shall be fenced and under cultivation.

Twenty Per Cent. will be deducted

from the valuation for cash, except the same should be at six dollars per acre, when the cash price will be five dollars.

J. W. FOSTER, Land Commissioner, Chicago, Illinois.

For the names of the Towns, Villages and Cities situated upon the Illinois Central Railroad see pages 188, 189, 190, APPLETON'S RAILWAY GUIDE.